

(12)特許協力条約に基づいて公開された国際出願

(19) 世界知的所有権機関  
国際事務局(43) 国際公開日  
2004 年 5 月 13 日 (13.05.2004)

PCT

(10) 国際公開番号  
WO 2004/039975 A1(51) 国際特許分類<sup>7</sup>: C12N 15/09, C12Q 1/68, G01N 33/50

(21) 国際出願番号: PCT/JP2003/013932

(22) 国際出願日: 2003 年 10 月 30 日 (30.10.2003)

(25) 国際出願の言語: 日本語

(26) 国際公開の言語: 日本語

(30) 優先権データ:  
特願 2002-316586  
2002 年 10 月 30 日 (30.10.2002) JP

(71) 出願人 (米国を除く全ての指定国について): 久光製薬株式会社 (HISAMITSU PHARMACEUTICAL CO., INC.) [JP/JP]; 〒841-0017 佐賀県 鳥栖市 田代大官町 408 Saga (JP). 千葉県 (CHIBA-PREFECTURE) [JP/JP]; 〒260-8667 千葉県 千葉市中央区 市場町1番1号 Chiba (JP).

(72) 発明者; および

(75) 発明者/出願人 (米国についてのみ): 中川原 章 (NAKAGAWARA, Akira) [JP/JP]; 〒260-0801 千葉県 千葉市

中央区 仁戸名町666-2 千葉県がんセンター内 Chiba (JP). 大平 美紀 (OHIRA, Miki) [JP/JP]; 〒260-0801 千葉県 千葉市中央区 仁戸名町666-2 千葉県がんセンター内 Chiba (JP).

(74) 代理人: 長谷川 芳樹, 外 (HASEGAWA, Yoshiki et al.); 〒104-0061 東京都 中央区 銀座一丁目10番6号 銀座ファーストビル 創英国際特許法律事務所 Tokyo (JP).

(81) 指定国 (国内): US.

(84) 指定国 (広域): ヨーロッパ特許 (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

添付公開書類:  
— 国際調査報告書

2 文字コード及び他の略語については、定期発行される各 PCT ガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。

(54) Title: NUCLEIC ACIDS ISOLATED FROM NEUROBLASTOMA AT STAGE 4S

(54) 発明の名称: 4 s 期神経芽細胞腫から単離された核酸

(57) Abstract: Prognosis (in particular, determination of the progress stage and judgment of neuroblastoma at stage 4s) of neuroblastoma is diagnosed by using a diagnostic agent for the prognosis of neuroblastoma and a diagnostic kit comprising a nucleic acid probe, a primer or a nucleic acid microarray with the use of a nucleic acid comprising a sequence selected from among the nucleic acid sequences represented by SEQ ID NOS:1 to 174, fragments thereof and combinations of the same.

(57) 要約: 配列表の配列番号 1 ないし 174 に記載の核酸配列からなる群より選ばれる 1 つの配列からなる核酸若しくはその断片等、或いはその組み合わせを利用した核酸プローブ、プライマーまたは核酸マイクロアレイからなる、神経神経芽細胞腫の予後診断剤および診断キットを用いて、神経芽細胞腫の予後 (特に、進行度分類および 4 s 期神経芽細胞腫の判定) を診断する。

WO 2004/039975 A1

## 明細書

### 4 s 期神経芽細胞腫から単離された核酸

#### 技術分野

【0001】 本発明は、ヒト神経芽細胞腫において発現する遺伝子に由来する核酸類に関する。さらに詳しくは、本発明は、4 s 期のヒト神経芽細胞腫において発現する遺伝子に由来する核酸類に関する。さらに、本発明は、このような核酸およびそれらの断片、あるいはそれらの組み合わせを利用した核酸プローブ、プライマーまたは核酸マイクロアレイ等からなる、4 s 期神経芽細胞腫の診断剤および診断キット、さらには上記遺伝子からの核酸配列情報に基づく癌細胞のプログラム細胞死機構の解明に関する。

#### 背景技術

##### 【0002】 (腫瘍形成と遺伝子)

個々の腫瘍にはそれぞれの個性があり、発癌の基本的な原理は同じであっても、その生物学的特性は必ずしも同じではない。近年、癌の分子生物学や分子遺伝学が急速に進歩し、発癌やいわゆる腫瘍細胞のバイオロジーが遺伝子レベルで説明できるようになってきた。

##### 【0003】 (神経芽細胞腫)

神経芽細胞腫は、末梢交感神経系細胞に由来する交感神経節細胞と副腎髄質細胞から発生する小児癌である。この交感神経系細胞は、発生初期の神経堤細胞が腹側へ遊走し、いわゆる交感神経節が形成される場所で分化成熟したものである。その一部の細胞はさらに副腎部へ遊走し、先に形成されつつある副腎皮質を貫通して髄質部に達し、そこで髄質を形成する。神経堤細胞は、ほかの末梢神経細胞の起源ともなっており、後根神経節（知覚神経）、皮膚の色素細胞、甲状腺C細胞、肺細胞の一部、腸管神経節細胞などへ分化する。

##### 【0004】 (神経芽細胞腫の予後)

神経芽細胞腫は多彩な臨床像を示すことが特徴である（中川原，「神経芽腫の発生とその分子機構」，小児内科，1998年，第30巻，p. 143）。例えば，1歳未満で発症する神経芽細胞腫は非常に予後が良く，大部分が分化や細胞死を起こして自然退縮する（予後良好型ともいう）。現在，広く実施されている生後6か月時の尿のマススクリーニングで陽性となる神経芽細胞腫の多くは，この自然退縮を起こしやすいものに属する。一方，1歳以上で発症する神経芽細胞腫は悪性度が高く，多くの場合，治療に抵抗して患児を死に至らしめる（予後不良型ともいう）。1歳以上の悪性度の高い神経芽細胞腫は，体細胞突然変異（Somatic mutation）が起こり，モノクローナルであるのに対し，自然退縮する神経芽細胞腫では生殖細胞突然変異（germ line mutation）のみの遺伝子変異でとどまっているとの仮説もある（Knudson AG et al., Regression of neuroblastoma IV-S:A genetic hypothesis N. Engl. J. Med., U.S.A. 1980, vol 302, p.1254）。さらに，臨床的にこれらの型の間位置する中間型の神経芽細胞腫もある。

【0005】 腫瘍の進行度からこれら神経芽細胞腫を分類すると以下のようになる。

1期：副腎または交感神経節に原発し，限局している。

2期：原発巣に限局した腫瘍と局部リンパ節転移のみを有する。リンパ節転移は正中線を越えない。

3期：腫瘍が正中線を越えて対側に浸潤またはリンパ節転移をきたす。

4期：骨、骨髄、眼窩部に遠隔転移を起こす。

4s期：1歳未満に発症し，骨髄、皮膚、肝に遠隔転移する。

【0006】 予後良好型の神経芽細胞腫は，1、2、4s期の腫瘍であり，予後不良型および中間型の神経芽細胞腫は，3、4期の腫瘍である。4s期の腫瘍は，特異的であり，通常生後数ヶ月の乳児に発症し，急速に腫瘍が増殖転移するが，突然増殖が止まり，その後は自然に腫瘍が消失する。このように，自然退縮

する腫瘍と悪性増殖する腫瘍との間の違いは、発症年齢と転移部位、さらに進行度が明らかに異なる。

【0007】（神経芽細胞腫の予後を推定する遺伝子）

最近の分子生物学的研究の進展により、神経成長因子（nerve growth factor : NGF）の高親和性レセプターである Trk A の発現が分化と細胞死の制御に深くかかわっていることが明らかとなってきた（Nakagawara A., The NGF story and neuroblastoma, Med. Pediatr. Oncol., U.S.A., 1998, Vol 31, p. 113）。Trk は神経栄養因子の高親和性受容体で、膜貫通型受容体であり、Trk-A、B、C の 3 つが主なものである。

【0008】 Trk ファミリー受容体は、中枢神経および末梢神経系において、特異的な神経細胞の分化と生存維持に重要な役割を果たしている（中川原等、「神経芽細胞腫におけるニューロトロフィン受容体の発現と予後」、小児外科、1997年、第29巻、p. 425-432）。腫瘍細胞の生存や分化は Trk チロシンキナーゼや Ret チロシンキナーゼからのシグナルで制御されている。なかでも、Trk A 受容体の役割は最も重要で、予後良好型の神経芽細胞腫では Trk A の発現が著しく高く、これからのシグナルが腫瘍細胞の生存・分化、または細胞死（アポトーシス）を強く制御している。一方、予後不良型の神経芽細胞腫では、Trk A の発現が著しく抑えられており、これに代わって Trk B あるいは Ret からのシグナルが生存の促進という形で腫瘍の進展を助長している。

【0009】 また、神経の癌遺伝子である N-myc の増幅が神経芽細胞腫の予後に関連していることも明らかになってきた（中川原、「脳・神経腫瘍の多段階発癌」、Molecular Medicine、1999年、第364巻、p. 366）。この遺伝子は神経芽細胞腫で初めてクローニングされたが、正常細胞や予後良好型の神経芽細胞腫では通常1倍体当たり1つしか存在しないのに対し、予後不良型の神経芽細胞腫においては数十倍に増幅されているのが見つかった。



【0010】 上記の遺伝子以外にも、予後良好型の神経芽細胞腫で高発現する遺伝子として、CD44、PTN、caspase等が知られており、また予後不良型の神経芽細胞腫で高発現する遺伝子としては、SVV (survivin)、MK (midkine)等が知られている。

5 【0011】 さらに、本発明者らは、予後良好型の神経芽細胞腫において、一群の新規な遺伝子が高発現していることを見出し（国際公開PCT/JPO1631号パンフレット）、また対照的に予後不良型の神経芽細胞腫において、別の一群の新規な遺伝子が高発現していることを見出した（国際公開PCT/JPO1629号パンフレット）。

10 【0012】 しかしながら、現在までに4s期神経芽細胞腫において発現する（特に、特異的に）遺伝子についてはほとんど知られていなかった。さらに、上記のように4s期神経芽細胞腫は自然退縮するので、この原因となる遺伝子の同定も急務である。

#### 発明の開示

15 【0013】 本発明は、上記従来技術の有する課題に鑑みてなされたものであり、一般的に神経芽細胞腫の予後良不良に関する遺伝子の核酸配列を明らかにし、そのような遺伝子情報の提供および予後良不良に関する診断を可能とすることを目的とする。本発明は、特定的には神経芽細胞腫の予後を診断し、該細胞腫の進行度分類を行い、4s期神経芽細胞腫の判定を可能とすることを目的とする。

20 【0014】 本発明者らは鋭意研究した結果、ヒト神経芽細胞腫の予後を検定し、予後良好型および予後不良型の臨床組織の各々からcDNAライブラリーを作製することに成功した。これら2種類のcDNAライブラリーから各々約2400個のクローンをクローニングし、神経芽細胞腫の予後の良悪によって分類し、それぞれのサブセットで遺伝子のプロファイリングを行った。

25 【0015】 そこで本発明者らは、前記サブセット間で示差的に発現し、かつ予後良好型の臨床組織でのみ発現が増強している遺伝子群を見いだした。加えて、

本発明者は、予後不良型の臨床組織でのみ発現が増強している遺伝子群をも見いだした。かかる知見に基づき、本発明者は少なくとも予後良好型の臨床組織または、予後不良型の臨床組織でのみ発現が増強している遺伝子を検出およびクローニングするための核酸配列情報を提供することを可能とした。

5      【0016】 さらに、本発明者らは、4 s 期神経芽細胞腫の臨床組織から同様に cDNA ライブラリーを作製することに成功した。このライブラリーから約 2700 個のクローンをクローニングした。このライブラリーのサブセットと、予後良好型および予後不良型の臨床組織からのライブラリーのサブセットを解析して、これらのサブセット間で発現する約 1600 個の遺伝子のプロファイリング  
10      を行った。その結果、前記サブセット間で示差的に発現する 452 個の遺伝子を同定した。これらの遺伝子をシークエンスしたところ、308 個の新規な遺伝子と、残り 144 個の既知の遺伝子とから成っていた。前記遺伝子をそれぞれのサブセット間での発現パターンに従って、分類し 7 つの群にグループ化した。

15      【0017】 かかる知見に基づき、本発明者らは、4 s 期神経芽細胞腫を特徴づける発現パターンを呈する遺伝子を検出およびクローニングするための遺伝子情報（核酸配列情報等）を提供することを可能とした。さらに該核酸配列情報に基づき、神経芽細胞腫の予後診断法（特に、進行度分類）を、4 s 期神経芽細胞腫の判定を含めて、可能とする診断剤や診断キットを提供することを可能とし、本発明を完成した。

20      【0018】 すなわち、本発明によれば、配列表の配列番号 1 ないし 174 に記載の核酸配列からなる群より選ばれる 1 つの配列からなる核酸が提供される。

    【0019】 好ましい核酸は、前記配列番号 1 ないし 174 のうち、配列番号 1 ないし 14 のいずれか一つに記載の核酸配列からなる核酸である。

25      【0020】 また、本発明によれば、上記これらの核酸に相補的な核酸も提供される。

【0021】 また、本発明によれば、上記の核酸と、またはそれに相補的な核酸とストリンジェントな条件下でハイブリダイズする核酸が提供される。

【0022】 また、本発明によれば、以下の(a)或いは(b)の核酸を含む核酸プローブが提供される：

- 5 (a) 配列表の配列番号1ないし174に記載の核酸配列からなる群より選ばれる1つの配列の全長若しくは一部からなる核酸、またはそれに相補的な核酸；  
(b) 配列表の配列番号1ないし174に記載の核酸配列からなる群より選ばれる1つの配列からなる核酸とストリンジェントな条件下でハイブリダイズする核酸、またはそれに相補的な核酸。

10 【0023】 好ましくは、前記(a)或いは(b)の核酸がDNAである。

【0024】 また、好ましくは、前記(a)または(b)の核酸が配列番号1ないし14に記載の核酸配列からなる群より選ばれる1つの配列からなる核酸である。

【0025】 また、本発明によれば上記の核酸プローブを有効成分として含有する4s期神経芽細胞腫の診断剤が提供される。

15 【0026】 さらに、本発明によれば、以下の(a)或いは(b)のDNAを含むプライマーが提供される：

(a) 配列表の配列番号175ないし1076に記載の核酸配列からなる群より選ばれる1つの配列からなるDNA、またはそれに相補的なDNA；

(b) 配列表の配列番号175ないし1076に記載の核酸配列からなる群より選  
20 ばれる1つの配列からなるDNAとストリンジェントな条件下でハイブリダイズするDNA、またはそれに相補的なDNA。

【0027】 好ましくは、前記(a)或いは(b)のDNAが配列番号175ないし202に記載の核酸配列、および配列番号519ないし540に記載の核酸配列からなる群より選ばれる1つの配列からなるDNA、または配列表の配列番号7  
25 85ないし798に記載の核酸配列からなる群より選ばれる1つの配列からなるDNAである。

【0028】 また、本発明によれば上記のプライマーを一組、有効成分として含有する4 s期神経芽細胞腫の診断キットが提供される。

【0029】 また、本発明によれば神経芽細胞腫の臨床組織サンプルから配列表の配列番号1ないし14に記載の核酸配列からなる群より選ばれる1つの配列からなる核酸の有無を検出することを特徴とする、4 s期神経芽細胞腫の判定方法が提供される。

【0030】 加えて、本発明によれば固相支持体に、配列表の配列番号1ないし174に記載の核酸配列からなる核酸の全長若しくは一部からなる核酸を複数個組み合わせて、固定してなる核酸マイクロアレイが提供される。

【0031】 また、本発明によれば固相支持体に、配列番号175ないし202に記載の核酸配列、配列番号519ないし540に記載の核酸配列、および配列番号785ないし798に記載の核酸配列からなる核酸を複数個組み合わせ、それらを固定してなる核酸マイクロアレイが提供される。ここで、記載された配列番号を有する核酸配列からなる核酸の複数の任意の組み合わせが用いられる。

発明を実施するための最良の形態

【0032】 以下、本発明に係る神経芽細胞腫に発現する遺伝子（以下、「本発明の遺伝子」という）に由来する核酸（以下、「本発明の核酸」という）について、その用途を含めて、本発明の好適な実施の形態を参照して、詳細に説明する。

【0033】 本発明の核酸は、上述のごとく本発明の遺伝子に由来するものであり、該遺伝子を構成するか或いは該遺伝子からインピボまたはインピトロの過程によって得られる。該核酸の鎖長には特に制限はなく、本明細書では前記遺伝子の一部に対応する核酸断片を含めて「本発明の核酸」という。核酸の鎖長が短い場合、その核酸は化学的手法で合成することができる。

【0034】 本明細書で使用する「核酸」という用語は、例えばDNAまたはRNA、或いはそれらから誘導された活性なDNA若しくはRNAでありうるが

リヌクレオチドを指し、好ましくは、DNAまたはRNAを意味する。特に好ましい核酸は、本明細書中に開示されるヒトcDNA配列と同一か、またはそれに相補的な配列を有する。

【0035】 また、本発明で使用する「ストリンジントな条件下でハイブリダイズする」という用語は、2つの核酸(または断片)が、Sambrook, J., Expression of cloned genes in E. coli, Molecular Cloning: A laboratory manual, U.S.A., Cold Spring Harbor Laboratory Press, 1989, p.9.47-9.62, p.11.45-11.61 に記載されたハイブリダイゼーション条件下で、相互にハイブリダイズすることを意味する。

【0036】 より具体的には、前記「ストリンジントな条件」とは、約45℃において6.0×SSCでハイブリダイゼーションを行った後に、50℃で2.0×SSCで洗浄することを指す。ストリンジエンシーの選択のため、洗浄工程における塩濃度を、例えば低ストリンジエンシーとしての約2.0×SSC、50℃から、高ストリンジエンシーとしての約0.2×SSC、50℃まで選択することができる。さらに、洗浄工程の温度を低ストリンジエンシー条件の室温、約22℃から、高ストリンジエンシー条件の約65℃まで高くすることができる。

【0037】 また、本明細書で使用する「核酸」という用語は、単離された核酸を指し、これは組換えDNA技術により調製された場合は細胞物質、培養培地を実質的に含有せず、化学合成された場合には前駆体化学物質またはその他の化学物質を実質的に含まない、核酸またはポリペプチドを指す。

【0038】 本明細書で使用する「予後良好型」とは、ヒト神経芽細胞腫のうち、腫瘍が限局して存在するか、または退縮や良性の交感神経節細胞腫になった状態を指し、N-mycその他腫瘍マーカー(TrkA、染色体異常等)から判断して、悪性度が低いと医師によって判断されるものである。本発明の好適な実施の形態では、病期1または2、発症年齢が1歳未満、手術後5年以上再発なく生存し、臨床組織中にN-mycの増幅が認められないものを予後良好型とした

が、このような特定の例には限定されない。また、本明細書で使用する「予後不良型」とは、ヒト神経芽細胞腫のうち、腫瘍の進行が認められる状態を指し、N-myc その他腫瘍マーカーから判断して、悪性度が高いと医師によって判断されるものである。本発明の好適な実施の形態では、病期 4、発症年齢が 1 歳以上、手術後 3 年以内に死亡、臨床組織中に N-myc の増幅が認められたものを予後不良型としたが、このような特定の例には限定されない。

【0039】 なお、4 s 期神経芽細胞腫は、上記のような臨床分子生物学的分類に従えば「予後良好型」に分類されるが、本明細書中では便宜上、「予後良好型」とは区別して取り扱う。

【0040】 神経芽細胞腫は、ヒトでは 2 種類しか知られていない神経細胞そのものの腫瘍の 1 つであり、そこで発現している遺伝子を解析することは、神経細胞のバイオロジーを理解する上で非常に有用な知見をもたらすものと考えられる。すなわち、脳や末梢神経から、部位特異的な均質な組織を得ることは極めて困難で、事実上不可能である。一方、神経芽細胞腫は、末梢交感神経細胞に由来するほぼ均一な神経細胞集団（腫瘍化してはいるが）から成り、均質に発現している神経関連遺伝子が得られる可能性が高い。また、神経芽細胞腫は癌であるため、神経発生の未熟な段階で発現している重要な遺伝子が多いことも特徴として挙げられる。

【0041】 さらに、神経芽細胞腫は、予後の良好なものと予後の不良なものとが臨床的、生物学的に明瞭に区別される。予後良好型の神経芽細胞腫の癌細胞は、増殖速度が極めて遅く、ある時点から自然退縮を始めることが特徴である。これまでの知見から、この自然退縮では、神経細胞の分化およびアポトーシス（神経細胞死）が起こっており、正常神経細胞の成熟段階で起こる分化とプログラム細胞死と非常によく似た現象であることが分かってきた。従って、この腫瘍で発現している遺伝子を解析することによって、神経の分化やアポトーシスに関連した重要な遺伝子情報を入手できる可能性が極めて高い。

【0042】 上記の有用な遺伝子情報を入手できる遺伝子である本発明の遺伝子およびそれらに由来する本発明の核酸は、4 s 期神経芽細胞腫の臨床組織（以下、4 s とともに略称する）に見出されたものであるが、予後良好型の臨床組織（以下、“F (favorable)” とともに略称する）および予後不良型の臨床組織（以下、“U F (unfavorable)” とともに略称する）でのそれら遺伝子の発現を比較すると以下のよう  
5 　　な特徴を有する。

【0043】 すなわち、前述のようにして得られ、少なくとも部分的にシーケンスした452個の遺伝子をそれぞれのサブセット間での発現パターンに基づいて、分類し7つの群にグループ化したところ、次のようになる。

10 　　【0044】 （グループ I）

このグループに属する遺伝子は、その発現（4 s）がUFと同程度であり、Fより低い。さらに、これら遺伝子をサブグループに分類すると、I-1、I-2およびI-3となる。各サブグループの遺伝子発現パターンについては、表1を参照。

15 　　【0045】 I-1に属する特定のクローンは、nbla20026(配列番号171), nbla20421(配列番号172), nbla22298(配列番号173), nbla22549(配列番号174) および nbla23020（以上、新規遺伝子）である。

20 　　【0046】 I-2に属する特定のクローンは、nbla20113, nbla20146(配列番号137), nbla20170(配列番号138), nbla20216(配列番号139), nbla20253, nbla20549, nbla20657(配列番号140), nbla20688(配列番号141), nbla20755(配列番号142), nbla20835, nbla20968, nbla21013(配列番号143), nbla21087, nbla21172(配列番号144), nbla21189, nbla21200(配列番号145), nbla21214, nbla21255(配列番号146), nbla21337, nbla21344, nbla21345(配列番号147), nbla21410(配列番号148), nbla21522(配列番号149), nbla21631(配列番号150),  
25 　　nbla21788(配列番号151), nbla21897(配列番号152), nbla21956, nbla22116(配列番号153), nbla22223(配列番号154), nbla22228, nbla22344(配列番号155),

5 nbla22351, nbla22361, nbla22474, nbla22629, nbla22939(配列番号 156),  
nbla23084(配列番号 157), nbla23103(配列番号 158), nbla23234(配列番号 159),  
nbla23300(配列番号 160), nbla23369(配列番号 161), nbla23436(配列番号 162),  
nbla23511(配列番号 163), nbla23664(配列番号 164), nbla23775, nbla23860(配  
列番号 165), nbla23877(配列番号 166), nbla23998(配列番号 167), nbla24043(配  
列番号 168), nbla24182, nbla24285, nbla24402(配列番号 169), nbla24434,  
nbla24460, nbla24762, nbla24821(配列番号 170), nbla24893, nbla24973,  
nbla24986 (以上、新規遺伝子)、nbla20279, nbla20687, nbla20924, nbla21168,  
nbla21303, nbla21483, nbla21838, nbla21917, nbla22099, nbla22438, nbla23111,  
10 nbla23208, nbla24118, nbla24279, nbla24771 および nbla24871 (以上、既知遺  
伝子) である。

【0047】 I-3 に属する特定のクローンは、nbla20084(配列番号 129),  
nbla21081(配列番号 130), nbla21420(配列番号 131), nbla21761, nbla22452(配  
列番号 132), nbla22595(配列番号 133), nbla22676(配列番号 134), nbla22909(配  
15 列番号 135), nbla23456, nbla24297, nbla24435(配列番号 136), nbla24719 (以  
上、新規遺伝子)、nbla20117, nbla20238, nbla20904, nbla23293, nbla23297,  
nbla23311, nbla23589, nbla23629, nbla23862, nbla24133 および nbla24761 (以  
上、既知遺伝子) である。

【0048】 (グループ II)

20 このグループに属する遺伝子は、その発現 (4 s) が F と同程度であり、UF  
より高い。さらに、これら遺伝子をサブグループに分類すると、II-1、II-2  
および II-3 となる。各サブグループの遺伝子発現パターンについては、表 1 を  
参照。

【0049】 II-1 に属する特定のクローンは、nbla20365(配列番号 117),  
25 nbla20378(配列番号 118), nbla20511(配列番号 119), nbla21039(配列番号 120),  
nbla21107(配列番号 121), nbla21367(配列番号 122), nbla21790(配列番号 123),



nbla21855, nbla22253 (配列番号 124), nbla22355 (配列番号 125), nbla22704, nbla22832 (配列番号 126), nbla23394, nbla23512, nbla23755 (配列番号 127), nbla24084, nbla24376, nbla24549 (配列番号 128) (以上、新規遺伝子)、nbla20624, nbla22029, nbla22424, nbla22594 および nbla22622 (以上、既知遺伝子) である。

- 5     【 0 0 5 0 】   II-2 に属する特定のクローンは、nbla20001 (配列番号 58), nbla20083 (配列番号 59), nbla20125, nbla20182 (配列番号 60), nbla20231, nbla20248 (配列番号 61), nbla20250 (配列番号 62), nbla20268, nbla20330 (配列番号 63), nbla20395, nbla23973, nbla23983 (配列番号 64), nbla24041, nbla24082, nbla24104, nbla24111 (配列番号 65), nbla24142 (配列番号 66), nbla24157 (配列番号 67), nbla24230 (配列番号 68), nbla24239, nbla20541 (配列番号 69), nbla20555 (配列番号 70), nbla20638, nbla20645 (配列番号 71), nbla20713 (配列番号 72), nbla20765, nbla20789, nbla20792, nbla20798, nbla21024, nbla24250 (配列番号 73), nbla24254 (配列番号 74), nbla24327 (配列番号 75), nbla24363, nbla24510 (配列番号 76), nbla24554 (配列番号 77), nbla24604 (配列番号 78), nbla24622, nbla24646, nbla24672, nbla21037 (配列番号 79), nbla21077, nbla21089, nbla21130, nbla21161 (配列番号 80), nbla21170 (配列番号 81), nbla21198 (配列番号 82), nbla21266, nbla21298 (配列番号 83), nbla21379 (配列番号 84), nbla24705 (配列番号 85), nbla24709, nbla24748, nbla24831, nbla24972, nbla21385 (配列番号 86), nbla21413, nbla21416 (配列番号 87), nbla21520, nbla21599 (配列番号 88), nbla21681 (配列番号 89), nbla21878 (配列番号 90), nbla21922 (配列番号 91), nbla21936, nbla22004-2 (配列番号 92), nbla22004-1 (配列番号 93), nbla22028, nbla22085 (配列番号 94), nbla22093, nbla22119 (配列番号 95), nbla22149 (配列番号 96), nbla22161 (配列番号 97), nbla22218, nbla22252 (配列番号 98), nbla22347 (配列番号 99), nbla22352 (配列番号 100), nbla22394 (配列番号 101), nbla22423 (配列番号 102), nbla22439 (配列番号 103), nbla22451, nbla22455, nbla22464, nbla22465, nbla22487, nbla22633 (配列番号

104), nbla22669, nbla22698(配列番号 105), nbla22726, nbla22886,  
nbla22896(配列番号 106), nbla23012, nbla23038, nbla23167(配列番号 107),  
nbla23339(配列番号 108), nbla23352(配列番号 109), nbla23575(配列番号 110),  
23592(配列番号 111), nbla23601(配列番号 112), nbla23630(配列番号 113),  
5 nbla23718, nbla23719, nbla23754(配列番号 114), nbla23892(配列番号 115),  
nbla23951, nbla23956(配列番号 116) (以上、新規遺伝子)、nbla20393, nbla20423,  
nbla20510, nbla20833, nbla20931, nbla20943, nbla21258, nbla21268, nbla21273,  
nbla21412, nbla21578, nbla21614, nbla21624, nbla21655, nbla21670, nbla21787,  
nbla21954, nbla21979, nbla22043, nbla22137, nbla22192, nbla22325, nbla22327,  
10 nbla22337, nbla22482, nbla22763, nbla22788, nbla22839, nbla22851, nbla22935,  
nbla22937, nbla23238, nbla23327, nbla23360, nbla23519, nbla23553, nbla23554,  
nbla23683, nbla23812, nbla23823, nbla23849, nbla23882, nbla23910, nbla24064,  
nbla24405, nbla24897 および nbla24913 (以上、既知遺伝子) である。

【0051】 II-3 に属する特定のクローンは、nbla20134, nbla20181,

15 nbla20264(配列番号 31), nbla20269(配列番号 32), nbla20276, nbla20406(配列  
番号 33), nbla20709, nbla20782, nbla20788, nbla20949(配列番号 34), nbla21046,  
nbla21122, nbla21211, nbla21233, nbla21251(配列番号 35), nbla21334(配列番  
号 36), nbla21356(配列番号 37), nbla21375, nbla21418(配列番号 38),  
nbla21480(配列番号 39), nbla21509(配列番号 40), nbla21524, nbla21527(配列  
20 番号 41), nbla21551(配列番号 42), nbla21735(配列番号 43), nbla21843,  
nbla21934, nbla22153, nbla22247(配列番号 44), nbla22382, nbla22477(配列番  
号 45), nbla22571, nbla22639(配列番号 46), nbla22789, nbla23060,  
nbla23174(配列番号 47), nbla23198(配列番号 48), nbla23218, nbla23328(配列  
番号 49), nbla23420(配列番号 50), nbla23483(配列番号 51), nbla23545,  
25 nbla23653, nbla23666, nbla23760, nbla23808(配列番号 52), nbla23830,  
nbla23851(配列番号 53), nbla23942, nbla24011(配列番号 54), nbla24131,

nbla24235(配列番号 55), nbla24556(配列番号 56), nbla24800(配列番号 57),  
nbla24908 (以上、新規遺伝子)、nbla20133, nbla20263, nbla20723, nbla20748,  
nbla20915, nbla21016, nbla21034, nbla21067, nbla21167, nbla21319, nbla21331,  
nbla21516, nbla21682, nbla21691, nbla21822, nbla21976-2, nbla21977,  
5 nbla22159, nbla22168, 22215-1, nbla22244, nbla22263, nbla22548, nbla23033,  
nbla23231, nbla23284, nbla23329-1, nbla23384, nbla23556, nbla23674,  
nbla23879-2, nbla24098, nbla24329, nbla24334, nbla24439-1, nbla24443,  
nbla24507, nbla24836, nbla24958 および nbla24989 (以上、既知遺伝子) である。

【0052】 (グループ III)

10 このグループに属する遺伝子は、その発現 (4 s) が F と同程度であり、U F  
より低い。さらに、これら遺伝子をサブグループに分類すると、III-1、III-  
2 および III-3 となる。各サブグループの遺伝子発現パターンについては、表  
1 を参照。

15 【0053】 III-1 に属する特定のクローンは、nbla20874 (新規遺伝子) お  
よび nbla23262 (既知遺伝子) である。

20 【0054】 III-2 に属する特定のクローンは、nbla20604, nbla21226,  
nbla21908(配列番号 27), nbla21928, nbla22027(配列番号 28), nbla22082(配列  
番号 29), nbla22643, nbla23303(配列番号 30), nbla23649, nbla24468 (以上、  
新規遺伝子)、nbla20141, nbla20446, nbla21538, nbla21558, nbla21623,  
nbla21969, nbla22219, nbla23272, nbla23307 および nbla24117 (以上、既知遺  
伝子) である。

25 【0055】 III-3 に属する特定のクローンは、nbla20578(配列番号 26),  
nbla21212 (以上、新規遺伝子)、nbla23478, nbla23896 および nbla24920 (以上、  
既知遺伝子) である。

【0056】 (グループ IV)

このグループに属する遺伝子は、その発現 (4 s) がUFと同程度であり、Fより高い ( $F < 4s = UF$ )。このグループに属する特定のクローンは、nbla23899 (配列番号 25) および nbla24526 (以上、新規遺伝子) である。

【0057】 (グループV)

- 5 このグループに属する遺伝子は、その発現 (4 s) がFより低く、UFより高い。さらに、これら遺伝子をサブグループに分類すると、V-1、V-2、V-3、V-4 および V-5 となる。各サブグループの遺伝子発現パターンについては、表1を参照。

- 10 【0058】 V-1 に属する特定のクローンは、nbla22031 (既知) である。V-2 に属する特定のクローンは、nbla22305 (既知) である。

- 15 【0059】 V-3 に属する特定のクローンは、nbla20123 (配列番号 17), nbla20382 (配列番号 18), nbla20660 (配列番号 19), nbla20666 (配列番号 20), nbla21239 (配列番号 21), nbla21729 (配列番号 22), nbla21831 (配列番号 23), nbla22826 (配列番号 24), nbla24521 (以上、新規遺伝子)、nbla20235 および nbla22607 (以上、既知遺伝子) である。

- 【0060】 V-4 に属する特定のクローンは、nbla20787 (配列番号 15), nbla22284 (配列番号 16) および nbla24756 (以上、新規遺伝子) である。

- 【0061】 V-5 に属する特定のクローンは、nbla24348 および nbla24686 (以上、新規遺伝子) である。

- 20 【0062】 (グループVI)

このグループに属する遺伝子は、その発現 (4 s) がFおよびUFより低いか、またはFおよびUFより高い。さらに、これら遺伝子をサブグループに分類すると、VI-1、VI-2、VI-3、VI-4、VI-5、VI-6、VI-7 および VI-8 となる。各サブグループの遺伝子発現パターンについては、表1を参照。

- 25 【0063】 VI-1 に属する特定のクローンは、nbla21297 (配列番号 14) (新規遺伝子) および nbla22443 (既知遺伝子) である。

【0064】 VI-2に属する特定のクローンは、nbla20211, nbla20469, nbla21250, nbla22182(配列番号12), nbla22761, nbla23256(配列番号13), nbla23631, nbla23711, nbla24532, nbla24951(以上、新規遺伝子)、nbla21750, nbla22129, nbla22808, nbla23064 および nbla23358(以上、既知遺伝子)である。

5 【0065】 VI-3に属する特定のクローンは、nbla20226(配列番号11)(新規遺伝子)である。

【0066】 VI-4に属する特定のクローンは、nbla21650(配列番号7), nbla22094(配列番号8), nbla22739(配列番号9)および nbla23525(配列番号10)(以上、新規遺伝子)である。

10 【0067】 VI-5に属する特定のクローンは、nbla23701(配列番号5)および nbla23890(配列番号6)(以上、新規遺伝子)である。

【0068】 VI-6に属する特定のクローンは、nbla20087(既知遺伝子)である。

15 【0069】 VI-7に属する特定のクローンは、nbla22689(配列番号2), nbla22968, nbla24079, nbla24135(配列番号3)および nbla24350(配列番号4)(以上、新規遺伝子)である。

【0070】 VI-8に属する特定のクローンは、nbla22256(新規遺伝子)である。

【0071】 (グループVII)

20 このグループに属する遺伝子(1個のみ)は、4sでのみ発現している。その特定のクローンは、nbla22420(配列番号1)(新規遺伝子)である。

【0072】 前記それぞれのグループについて、遺伝子群を新規な遺伝子と、既知の遺伝子に分け、まとめたものが表1である。

25 【0073】 表1

グループ	発現パターン	新規遺伝子	既知遺伝子	計
I-1	$F \gg 4s = UF$	5	0	5
I-2	$F > 4s = UF$	59	16	75
I-3	$F \geq 4s = UF$	12	11	23
II-1	$F = 4s \gg UF$	18	5	23
II-2	$F = 4s > UF$	105	47	152
II-3	$F = 4s \geq UF$	55	40	95
III-1	$F = 4s \ll UF$	1	1	2
III-2	$F = 4s < UF$	10	10	20
III-3	$F = 4s \leq UF$	2	3	5
IV	$F < 4s = UF$	2	0	2
V-1	$F > 4s \gg UF$	0	1	1
V-2	$F \geq 4s \gg UF$	0	1	1
V-3	$F > 4s > UF$	9	2	11
V-4	$F \geq 4s > UF$	3	0	3
V-5	$F \geq 4s \geq UF$	2	0	2
VI-1	$F \gg 4s < UF$	1	1	2
VI-2	$F > 4s < UF$	10	5	15
VI-3	$F > 4s \leq UF$	1	0	1
VI-4	$F \geq 4s \leq UF$	4	0	4
VI-5	$F < 4s \gg UF$	2	0	2
VI-6	$F \leq 4s \gg UF$	0	1	1
VI-7	$F < 4s > UF$	5	0	5
VI-8	$F \leq 4s \geq UF$	1	0	1
VII	4sのみ	1	0	1
クローン総数		308	144	452

なお、表中および上記分類において、「=」は遺伝子発現量がサブセット間で

ほぼ等しいことを示す。

【0074】 例えば、グループ VI に属する遺伝子群は、4 s 期神経芽細胞腫における遺伝子発現量と、予後良好型および予後不良型の臨床組織における同一遺伝子の遺伝子発現量を比較すると、4 s 期神経芽細胞腫において特異的である（すなわち、いずれよりもかなり高いか、或いはかなり低い）。従って、これらの遺伝子の少なくともひとつの存在を臨床組織サンプルに検出すれば、4 s 期神経芽細胞腫である可能性が高いとの判定ができる。

【0075】 また、グループ VII に属する遺伝子は、4 s 期神経芽細胞腫の臨床組織においてのみ、検出されている。従って、この遺伝子の存在を臨床組織サンプルに検出すれば、4 s 期神経芽細胞腫である可能性が高いとの判定ができることになる。

【0076】 さらに、残りのグループに属する遺伝子群も、4 s 期神経芽細胞腫における、遺伝子発現量と、予後良好型および予後不良型の臨床組織における同一遺伝子の遺伝子発現量を比較すると、上記のような発現パターンが見出される。従って、これらの遺伝子の発現パターンを複数個、検出して、それらを解析すれば、検定する臨床組織サンプルが 4 s 期神経芽細胞腫であるかどうかの判定ができる。特に、この目的で本発明の核酸を使用するとき、後述の核酸マイクロアレイを作製して、前記判定に供することが好ましい。

【0077】 このように、本発明の核酸は神経芽細胞腫の予後の良不良を診断する腫瘍マーカーとして有用である。すなわち、本発明は、ヒト神経芽細胞腫の予後およびそれに関連する様々な遺伝子情報を以下の手段により提供可能とする。

【0078】 （1）ハイブリダイゼーションに用いるプローブ

本発明の 1 つの実施の形態に従えば、本発明の核酸をハイブリダイゼーションのプローブ（すなわち、本発明の核酸プローブ）として使用することによって、神経芽細胞腫で発現している本発明の遺伝子を検出することが可能である。さらに、本発明の核酸をハイブリダイゼーションのプローブとして使用し、様々な腫

瘍、正常組織における遺伝子発現を調べることによって、該遺伝子発現の分布を同定することも可能である。

【0079】 本発明の核酸をハイブリダイゼーションのプロープとして使用する場合、ハイブリダイゼーション方法自身については特に限定されない。好適な方法としては、例えばノザンハイブリダイゼーション、サザンハイブリダイゼーション、コロニーハイブリダイゼーション、ドットハイブリダイゼーション、Fluorescence in situ hybridization (FISH)、in situ hybridization (ISH)、DNAチップ法、マイクロアレイ法、などが挙げられる。

【0080】 前記ハイブリダイゼーションの1つの応用例として、本発明の核酸をノザンハイブリダイゼーションのプロープとして用い、検定する臨床組織サンプル中においてmRNAの長さを測定することや、遺伝子発現を定量的に検出することが可能である。

【0081】 また、別の応用例として、本発明の核酸をサザンハイブリダイゼーションのプロープとして用い、検定する臨床組織サンプルのゲノムDNA中の、該DNA配列の有無を検出することが可能である。

【0082】 さらに別の応用例として、本発明の核酸をFISH法のプロープとして用い、本発明の遺伝子の染色体上の位置を同定することも可能である。

【0083】 さらに別の応用例として、本発明の核酸をISH法のプロープとして用い、本発明の遺伝子の発現の組織分布を同定することも可能である。

【0084】 本発明の核酸をハイブリダイゼーション用プロープとして使用する場合、少なくとも20個の塩基長が必要であり、本発明の核酸のうち、20個以上の連続した塩基からなる核酸が好ましく用いられる。より好ましくは、40個以上の連続した塩基からなる核酸が用いられる。特に好ましくは、60個以上の連続した塩基からなる核酸が用いられる。さらに、配列表の配列番号1～174に記載の核酸配列の全長からなる核酸を用いてもよい。



【0085】 当業者にとって、上記各種のハイブリダイゼーションにおける核酸プローブ技法は周知であり、例えば、個々の塩基長を有する本発明の核酸プローブと、目的とするポリヌクレオチドとの適当なハイブリダイズ条件は容易に決定することができる。種々の塩基長を含むプローブに対し至適であるハイブリダイズ条件を得るためのかかる操作は、当業者では周知であり、例えば、Sambrookら、Molecular Cloning: A laboratory manual（前掲）を参照して、行えばよい。

【0086】 好ましくは、本発明の核酸プローブは、容易に検出されるように標識される。検出可能な標識は、目視によって、または機器を用いるかのいずれかによって検出され得るいかなる種類、元素または化合物であってもよい。通常使用される検出可能な標識としては、放射性同位元素、アビジンまたはビオチン、蛍光物質（FITCまたはローダミン等）が挙げられる。前記放射性同位元素は、 $^{32}\text{P}$ 、 $^{14}\text{C}$ 、 $^{125}\text{I}$ 、 $^3\text{H}$ 、 $^{35}\text{S}$ 等である。また、ビオチン標識ヌクレオチドは、ニックトランスレーション、化学的または酵素的手段によって、核酸に組み込むことができる。ビオチン標識されたプローブは、アビジン/ストレプトアビジン、蛍光標識、酵素、金コロイド複合体等などの標識手段を使用したハイブリダイゼーション後に検出される。また、本発明の核酸プローブは、タンパク質と結合させることによって標識されてもよい。その目的で、例えば放射性または蛍光ヒストン一本鎖結合タンパク質が使用される。このようにして、適当に標識されたプローブは、本発明の診断剤を構成する。

【0087】 (2) PCRに用いるプライマー

本発明の遺伝子を検出するには上記のハイブリダイゼーション法の他に、本発明の核酸に含まれる任意の核酸（DNA）配列からプライマーを設計して、Polymerase Chain Reaction（PCR）法を用いることにより可能である。例えば、検定する臨床組織サンプルからmRNAを抽出し、RT-PCR法により遺伝子発現を半定量的に測定することが可能である。このような方法は、当業者にとって周知の方法に従って行われるが、例えば、Sambrook ら、Molecular Cloning: A

laboratory manual (前掲)、および遺伝子病入門 (高久史磨著: 南江堂) が参照される。

【0088】 本発明の核酸 (DNA) をPCR用プライマー (すなわち、本発明のプライマー) として使用する場合、10ないし60個の塩基長が必要であり、  
5 本発明に係る核酸配列の一部であって、10ないし60個の連続した塩基を有する核酸が好ましく用いられる。より好ましくは、15ないし30個の塩基を有するものが用いられる。また一般的には、プライマー配列中のGC含量が40ないし60%のものが好ましい。さらに、増幅に用いる2つのプライマー間の $T_m$ 値に差がないことが望まれる。また、プライマーの3'末端でアニールせず、プライ  
10 マー内で2次構造をとらないことも望ましい。

#### 【0089】 (3) 遺伝子のスクリーニング

本発明の核酸を使用することによって、神経芽細胞腫のみならず様々な組織や細胞で発現している本発明の遺伝子の発現 (またはその分布) を検出することが可能である。これは例えば、本発明の核酸を上記のようにハイブリダイゼーションのプロブ、またはPCRのプライマーとして使用することによって、可能と  
15 なる。

【0090】 また、DNAチップ、核酸マイクロアレイ等を用いても遺伝子の発現分布を検出することが可能である。すなわち、本発明の核酸を直接、前記チップ、アレイ上に張り付けることが出来る。チップ、アレイに張り付けるために、  
20 高精度分注機でかかる核酸等 (DNA) を基板にスポットする方法が知られている (例えば、米国特許第5807522号を参照)。そこに臨床組織サンプルから抽出したmRNAを蛍光物質などで標識し、ハイブリダイズさせ、その遺伝子がどの様な組織の細胞で高発現しているかを解析することが可能である。またチップ、アレイ上に張り付けるDNAは、本発明の核酸またはその断片をプロブ  
25 として用いたPCRの反応産物であってもよい。別法として、本発明の核酸断片

(DNA断片)を基板上で直接合成してDNAチップ若しくはアレイとすることもできる(例えば、米国特許第5424186号を参照)。

【0091】 (4) DNAのクローニング

本発明の核酸を使用することによってヒト神経芽細胞腫において発現している  
5 遺伝子をクローニングすることが可能である。例えば、本発明の核酸をノザンハイブリダイゼーションのプロープ、コロニーハイブリダイゼーションのプロープまたはPCRのプライマーとして使用し、本発明の遺伝子をクローニングすることが可能である。クローニング可能な遺伝子としては特に、予後不良型の神経芽細胞腫と予後不良型の神経芽細胞腫で発現量に差がある遺伝子、4s期神経芽細胞腫で発現する遺伝子、他の組織や癌細胞での発現様式とは異なって発現している  
10 遺伝子、細胞周期依存的に発現している遺伝子、神経分化に伴って誘導される遺伝子、癌遺伝子または癌抑制遺伝子によって発現が制御される遺伝子等が挙げられる。

【0092】 (5) 腫瘍の予後診断の方法およびそのために使用可能な腫瘍マーカー

上述のように本発明の遺伝子は、4s期神経芽細胞腫(予後良好型および予後不良型の神経芽細胞腫を含めて)において発現が見出された。そこで、本発明の核酸をハイブリダイゼーションのプロープ或いはPCRのプライマーとして使用し、被験者から採取した、検定する臨床組織サンプル中で、前記遺伝子の発現パ  
15 ターンを調べることにより予後診断(4s期神経芽細胞腫の判定)が行える。遺伝子の検出方法としては、前述のノーザンブロットハイブリダイゼーション法、インサイチュハイブリダイゼーション法、およびRT-PCR法等が挙げられる。

【0093】 ハイブリダイゼーション法を用いるとき、検出する臨床組織サンプル中で前記核酸プロープとハイブリダイズする核酸の量を対照サンプル(例えば、予後良好型および予後不良型の神経芽細胞腫からの臨床組織)と比較して、  
25 遺伝子発現パターンを決定する。このようにして遺伝子発現パターンを検出する

のに使用したそれぞれの核酸について、例えば、表 1 に記載の発現パターンと比較、解析して、予後診断できる。この目的では、前記の核酸マイクロアレイの使用が望ましい。また、RT-PCR法を用いるとき、サンプルからmRNAを抽出し、これをDNAに逆転写して、前記プライマーにより増幅するRT-PCR法を用いて、遺伝子発現を半定量的に測定する。それから前記と同様にして、予後診断できる。この目的のためには、該プライマーを必須成分として一組含有する診断キットを用いることが好ましい。該診断キットは、プライマー成分以外に、PCR用の緩衝液、洗浄液、および酵素等の公知の成分を含む。

【0094】 (6) アンチセンスオリゴヌクレオチド

本発明の別の実施の形態に従えば、本発明の核酸に対するアンチセンスオリゴヌクレオチドが提供される。前記アンチセンスオリゴヌクレオチドは、本発明の核酸にハイブリダイズすることが可能であり、アンチセンスDNAとアンチセンスRNAとを含む。アンチセンスDNAは、DNAからmRNAへの転写を阻害し、アンチセンスRNAは、mRNAの翻訳を阻害する。このようなアンチセンスオリゴヌクレオチドは、自動合成機を使用して、または本発明の核酸を鋳型とするPCR法により合成できる。さらに、該アンチセンスオリゴヌクレオチドは、DNAやmRNAとの結合力、組織選択性、細胞透過性、ヌクレアーゼ耐性、細胞内安定性が高められたアンチセンスオリゴヌクレオチド誘導体をも包含する。このような誘導体は、公知のアンチセンス技術を用いて、合成することができる。

【0095】 mRNAの翻訳開始コドン付近、リボソーム結合部位、キャッピング部位、スプライス部位の配列に相補的な配列を有するアンチセンスオリゴヌクレオチドは、該RNAの合成を阻止することができ、特に遺伝子の発現抑制効果が高い。従って、本発明は、かかるアンチセンスオリゴヌクレオチドを好適に包含する。

【0096】 (7) 遺伝子治療

本発明の別の実施の形態に従えば、遺伝子治療に用いられる治療用遺伝子をコードする核酸配列が提供される。そこで、本発明の核酸を遺伝子運搬に使用されるベクターに導入して、任意の発現プロモーターにより導入遺伝子（本発明の遺伝子）を発現させ、遺伝子治療に用いることができる。

5      【0097】    1. ベクター

導入されうるウイルスベクターは、DNAまたはRNAウイルスをもとに作製できる。このようなベクターは、MoMLVベクター、ヘルペスウイルスベクター、アデノウイルスベクター、AAVベクター、HIVベクター、SIVベクター、センダイウイルスベクター等のいかなるウイルスベクターであってもよい。

10      また、ウイルスベクターの構成タンパク質群のうち1つ以上を、異種ウイルスの構成タンパク質に置換する、または、遺伝子情報を構成する核酸配列のうち一部を異種ウイルスの核酸配列に置換する、シュードタイプ型のウイルスベクターも本発明に使用できる。例えば、HIVの外皮タンパク質であるEnvタンパク質を、小水痘性口内炎ウイルス（vesicular stomatitis Virus: VSV）の外皮タンパク質であるVSV-Gタンパク質に置換したシュードタイプウイルスベクターが

15      挙げられる（Naldini L., Science, U.S.A., 1996, Vol. 272, p.263）。さらに、治療効果を持つウイルスであれば、ヒト以外の宿主域を持つウイルスもウイルスベクターとして使用可能である。ウイルス以外のベクターとしてはリン酸カルシウムと核酸の複合体、リボソーム、カチオン脂質複合体、センダイウイルス

20      リボソーム、ポリカチオンを主鎖とする高分子キャリアー等が使用可能である。さらに遺伝子導入系としてはエレクトロポレーション、遺伝子銃等も使用可能である。

          【0098】    2. 発現プロモーター

さらに、治療用遺伝子に用いられる発現カセットは、標的細胞内で遺伝子を発

25      現させることができるものであれば、特に制限されることなくいかなるものでも用いることができる。当業者はそのような発現カセットを容易に選択することが

できる。好ましくは、動物由来の細胞内で遺伝子発現が可能な発現カセットであり、より好ましくは、哺乳類由来の細胞内で遺伝子発現が可能な発現カセットであり、特に好ましくは、ヒト由来の細胞内で遺伝子発現が可能な発現カセットである。発現カセットに用いられる遺伝子プロモーターは、例えばアデノウイルス、  
5 サイトメガロウイルス、ヒト免疫不全ウイルス、シミアンウイルス 40、ラウス肉腫ウイルス、単純ヘルペスウイルス、マウス白血病ウイルス、シンビスウイルス、A型肝炎ウイルス、B型肝炎ウイルス、C型肝炎ウイルス、パピローマウイルス、ヒトT細胞白血病ウイルス、インフルエンザウイルス、日本脳炎ウイルス、JCウイルス、パルボウイルスB19、ポリオウイルス等のウイルス由来のプロ  
10 モーター、アルブミン、SR $\alpha$ 、熱ショック蛋白、エロンゲーション因子等の哺乳類由来のプロモーター、CAGプロモーター等のキメラ型プロモーター、テトラサイクリン、ステロイド等によって発現が誘導されるプロモーターを含む。

### 【0099】 3. 医薬品

遺伝子治療に用いる医薬品は、上記のような治療用にデザインされた薬物遺伝子を含む組換えウイルスベクターとして調製される。より具体的に言えば、本発  
15 明の遺伝子を含む組換えウイルスベクターを、水、生理食塩水、等張化した緩衝液等の適当な溶媒に溶解することで調製できる。その際、ポリエチレングリコール、グルコース、各種アミノ酸、コラーゲン、アルブミン等を保護材として添加しても調製可能である。

### 【0100】 4. 投与方法、投与量

上記医薬品の生体への投与の方法については特に制限はない。例えば非経口的投与（注射投与など）することにより好ましく実施できる。その医薬品の使用量は、その使用方法、使用目的等により異なり、当業者は容易に適宜選択および最適化することが可能である。例えば、注射投与して用いる場合には、1日量約0.  
25  $1\mu\text{g}/\text{kg} \sim 1,000\text{mg}/\text{kg}$ を投与するのが好ましく、より好ましくは、1日量約 $1\mu\text{g}/\text{kg} \sim 100\text{mg}/\text{kg}$ である。

【0101】 以下、実施例に即してさらに詳しく説明するが、本発明の技術的範囲はこれらの例に限定されるものではない。

【0102】 (実施例)

以下、実施例に基づいて本発明をより具体的に説明するが、本発明は以下の実施例に限定されるものではない。

【0103】 (製造例1) 神経芽細胞腫からのcDNAライブラリーの作製

1. サンプル入手

ヒト神経芽細胞腫(4s期)の臨床組織サンプルを手術摘出直後に準無菌的に凍結し、その後-80℃に保存した。

【0104】 2. mRNAの調製

1に記載のサンプル2~3gをTotal RNA Extraction Kit (QIGEN社製)で処理し、トータルRNAを抽出した。抽出したトータルRNAをオリゴdTセルロースカラム (Collaborative社製)を用いて、poly A構造を有するmRNAプールに精製した。さらに、以下の手順に従い、オリゴキャッピング法(Y. Suzuki et al., Gene, U.S.A., 1997, Vol. 200, pp.149-156)を用いてcDNAライブラリーを調製した。

【0105】 3. mRNAの脱リン酸化

上記2において調製した100~200μgのmRNAプールを67.3μlの0.1%ジエチルピロカーボネート(DEPC)を含む滅菌超純水(DEPC-H<sub>2</sub>O)に溶解させ、20μlの5x BAPバッファー[Tris-HCl (500mM、pH=7.0) /メルカプトエタノール(50mM)]、2.7μlのRNasin (40unit/μl: Promega社製)、10μlのBAP (0.25unit/μl、バクテリア由来アルカリフォスファターゼ: 宝酒造社製)を加えた。この混合液を37℃で1時間反応させ、mRNAの5'末端の脱リン酸化処理を行った。その後、フェノール・クロロホルム処理を2回行い、最後にエタノール沈殿により、脱リン酸化mRNAプールを精製した。

**【0106】 4. 脱リン酸化mRNAの脱キャップ処理**

上記3において調製した脱リン酸化mRNAプールの全量を75.3  $\mu$ lの0.1%DEPCを含む滅菌超純水に溶解させ、20  $\mu$ lの5xTAPバッファー[酢酸ナトリウム(250mM、pH=5.5)/メルカプトエタノール(50mM)、EDTA(5mM、pH=8.0)]、2.7  $\mu$ lのRNasin(40unit/ $\mu$ l)、2  $\mu$ lのTAP(Tobacco Acid pyrophosphatase: 20unit/ $\mu$ l)]を加えた。この混合液を37℃で1時間反応させ、脱リン酸化mRNAの5'末端の脱キャップ処理を行った。この際、キャップ構造を持たない不完全長の脱リン酸化mRNAは、脱キャップ処理されず5'末端は脱リン酸化された状態に留まった。その後、フェノール・クロロホルム処理、エタノール沈殿により、脱キャップmRNAプールを精製した。

**【0107】 5. オリゴキャップmRNAの調製**

上記4において調製した脱キャップmRNAプールの全量を11  $\mu$ lの0.1%DEPCを含む滅菌超純水に溶解させ、4  $\mu$ lの5'-オリゴRNA(5'-AGCAUCGAGUCGGCCUUGGCCUACUGG-3': 配列番号1079; 100ng/ $\mu$ l)、10  $\mu$ lの10xligationバッファー[Tris-HCl(500mM、pH=7.0)/メルカプトエタノール(100mM)]、10  $\mu$ lの塩化マグネシウム(50mM)、2.5  $\mu$ lのATP(24mM)、2.5  $\mu$ lのRNasin(40unit/ $\mu$ l)、10  $\mu$ lのT4 RNA ligase(25unit/ $\mu$ l: 宝酒造社製)、50  $\mu$ lのポリエチレングリコール(50%w/v、PEG8000: シグマ社製)を加えた。この混合液を20℃で3時間反応させ、脱キャップmRNAの5'末端に5'-オリゴRNAを連結した。この際、キャップ構造を持たない不完全長の脱リン酸化mRNAは、5'-オリゴRNAが連結されない。その後、フェノール・クロロホルム処理、エタノール沈殿により、オリゴキャップmRNAプールを精製した。

**【0108】 6. オリゴキャップmRNAからのDNA除去**



上記5において調製したオリゴキャップmRNAプールを70.3 $\mu$ lの0.1%DEPCを含む滅菌超純水に溶解させ、4 $\mu$ lのTris-HCl (1M、pH=7.0)、5.0 $\mu$ lのDTT (0.1M)、16 $\mu$ lの塩化マグネシウム (50mM)、2.7 $\mu$ lのRNasin (40unit/ $\mu$ l)、2 $\mu$ lのDNase I (5unit/ $\mu$ l：宝酒造社製)を加えた。この混合液を37℃で10分間反応させ、余分なDNAを分解した。その後、フェノール・クロロホルム処理、エタノール沈殿、カラム精製 (S-400HR：ファルマシアバイオテック社製)により、DNA (-) オリゴキャップmRNAプールを精製した。

#### 【0109】 7. First Strand cDNAの調製

上記6において調製したDNA (-) オリゴキャップmRNAプールを、Super Script II (ライフテックオリエンタル社製キット)を用いて逆転写し、First Strand cDNAプールを得た。

【0110】 DNA (-) オリゴキャップmRNAプールを21 $\mu$ lの滅菌蒸留水に溶解させ、10 $\mu$ lの10xFirst strandバッファー (キット付属品)、8 $\mu$ lのdNTPmix (5mM、キット付属品)、6 $\mu$ lのDTT (0.1M、キット付属品)、2.5 $\mu$ lのオリゴdTアダプタープライマー (5pmol/ $\mu$ l、5'-GCGGCTGAAGACGGCCTATGTGGCCTTTTTTTTTTTTTTTT-3'配列番号1080)、2.0 $\mu$ lのRNasin (40unit/ $\mu$ l)、2 $\mu$ lのSuper Script II RTase (キット付属品)を加えた。この混合液を42℃で3時間反応させ、逆転写反応を行った。その後、フェノール・クロロホルム処理、アルカリ処理、中和処理にて全てのRNAを分解し、エタノール沈殿で精製した。

#### 【0111】 8. Second Strand cDNAの調製

上記7において調製したFirst Strand cDNAプールを、Gene Amp (パーキンエルマー社製キット)を用いて、PCR増幅した。First Strand cDNAプールを52.4 $\mu$ lの滅菌蒸留水に溶解させ、30 $\mu$ lの3.3xReactionバッファー (キット付属品)、8 $\mu$ lのdNTP mix (2.5

mM、キット付属品)、4.4  $\mu$ lの酢酸マグネシウム(25 mM、キット付属品)、1.6  $\mu$ lのプライマーF(10 pmol/ $\mu$ l、5'-AGCATCGAGTCGGCCTTGTTG-3'配列番号1081)、1.6  $\mu$ lのプライマーR(10 pmol/ $\mu$ l、5'-GCGCTGAAGACGGCCTATGT-3'配列番号1082)、2  $\mu$ lのrTth(キット付属品)を加えた。この混合液に、100  $\mu$ lのミネラルオイルを静かに加え重層した。この反応液を94℃で5分間変性させた後、94℃、1分間、52℃、1分間、72℃、10分間を1サイクルとして12サイクル繰り返し、さらに72℃で10分間放置し、PCR反応を行った。その後、フェノール・クロロホルム処理、エタノール沈殿で精製し、Second Strand cDNAプールを得た。

#### 【0112】 9. Second Strand cDNAのSfiI処理

上記8において調製したSecond Strand cDNAプールを87  $\mu$ lの滅菌蒸留水に溶解させ、10xNEBバッファー(NEB社製)、100xBSA(ウシ血清アルブミン、NEB社製)、2  $\mu$ lのSfiI(制限酵素、20 unit/ $\mu$ l、NEB社製)を加えた。この混合液を50℃で一晩反応させ、SfiIによる制限酵素処理を行った。その後、フェノール・クロロホルム処理、エタノール沈殿で精製し、両末端がSfiI処理されたcDNAプールを得た。

#### 【0113】 10. SfiI処理されたcDNAのサイズ分画

上記9において調製したSfiI処理されたcDNAプールを1%のアガロースゲルで電気泳動し、2 kb以上の分画をGene clean II(Bio 101社製)を用いて精製した。精製したcDNAプールは100  $\mu$ lの滅菌蒸留水に溶解させ、37℃で6時間放置した。その後、フェノール・クロロホルム処理、エタノール沈殿で精製し、長鎖cDNAプールを得た。

#### 【0114】 11. cDNAライブラリー

上記10において調製した長鎖cDNAプールをDNA Ligation kit ver.1(宝酒造社製キット)を用いてクローニングベクターであるpME18S-FL3(東

京大学医科学研究所 菅野純夫教授より供与) にライゲーションを行った。長鎖 cDNA プールを  $8\mu\text{l}$  の滅菌蒸留水に溶解し、あらかじめ制限酵素 *Dra* I I で処理した  $1\mu\text{l}$  の pME18S-FL3、 $80\mu\text{l}$  の Solution A (キット付属品)、 $10\mu\text{l}$  の Solution B (キット付属品) を加え、  
5 16℃で3時間反応させた。その後、フェノール・クロロホルム処理、エタノール沈殿で精製し cDNA ライブラリーを得た。

【0115】 (実施例1) 大腸菌へのトランスフォーメーション

1. クローニング

製造例1の12で調製した cDNA ライブラリーを大腸菌 (TOP-10、  
10 Invitrogen 社製) にトランスフォーメーションした。すなわち、cDNA ライブラリーを  $10\mu\text{l}$  の滅菌蒸留水に溶解し、TOP-10 に混合した。その後、氷上にて30分間、40℃で1分間、氷上で5分間インキュベートした。 $500\mu\text{l}$  の SOB 培地を加え、37℃で60分間振盪培養した。アンピシリンを含む寒天培地上に適量づつ播種し、37℃で一昼夜培養して、大腸菌クローンを得た。  
15 ここで、5075個のクローンを無作為にピックアップした。

【0116】 2. 大腸菌クローンの保存 (グリセロールストックの調製)

上記1において得られた寒天培地上の各大腸菌クローンを、爪楊枝にて拾い上げ、96穴プレートに準備した  $120\mu\text{l}$  の LB 培地中に懸濁させた。この96穴プレートを37℃で一晩静置し、大腸菌の培養を行った。その後、60%グリセロール溶液を  $72\mu\text{l}$  加え、-20℃で保存した (グリセロールストック)。  
20

【0117】 (実施例2) 核酸配列決定

1. プラスミドの調製

実施例1の2で調製した  $10\mu\text{l}$  のグリセロールストックを  $15\text{ml}$  の遠心チューブに移し、 $3\text{ml}$  の LB 培地、 $50\mu\text{g}/\text{ml}$  のアンピシリンを加え、37℃  
25 で一晩振盪し、大腸菌の培養を行った。その後、QIA Prep Spin Miniprep Kit (QIAGEN 社製) を用いて大腸菌からプラスミドDNAを抽出、精製した。

**【0118】 2. 両末端シーケンスの解析**

上記1において調製したプラスミドDNAをDNA Sequencing Kit (ABI社製キット)を用いて両末端のシーケンスを決定した。600ngのプラスミドDNA、8 $\mu$ lのプレミックス(キット付属品)、3.2pmolのプライマーを混合し、滅菌蒸留水で合計20 $\mu$ lになるように調製した。この混合液を96℃で2分間変性させた後、96℃、10秒間、50℃、5秒間、60℃、4分間を1サイクルとして25サイクル繰り返し反応を行った。その後エタノール沈殿で精製した。変性条件下でポリアクリルアミドゲルにて電気泳動を行い、ABI 377 (ABI社製)を用いて配列決定を行った。

**【0119】 (実施例3) データベースを用いるホモロジー検索**

実施例2において両末端シーケンスを解析して得られたサンプルのDNA配列情報についてインターネットを介したDNA配列のホモロジー検索を行った。検索にはNCBI (National Center of Biotechnology Information USA, <http://www.ncbi.nlm.nih.gov/BLAST>)のBLASTを用いた。BLASTサーチのソフトとして、DYNACLUSt Ver. 4.0 (DYNACOM社)を使用した。ホモロジー検索の結果、約2700個の遺伝子を同定した。これらの遺伝子を分類し、RepeatMaskerソフトを使用して反復配列を取り除いたところ、1598個の遺伝子が得られた。そのうち、新規な遺伝子は、963個であり、既知の遺伝子は635個であった。

**【0120】** これらの遺伝子のうち、新規なもの308個については、シーケンスできたものに関して、配列表にそれらの部分解読配列を示してある。

**【0121】 (実施例4) 半定量的RT-PCRによる遺伝子発現の比較****1. サンプル入手**

ヒト神経芽細胞腫(4s期)の臨床組織サンプルを手術摘出直後に準無菌的に凍結し、その後-80℃に保存した。このようなサンプルを8検体用意した。同

様に、予後良好型および予後不良型のヒト神経芽細胞腫の臨床組織サンプルを各12検体ずつ用意した。

【0122】 予後良好型および予後不良型の神経芽細胞腫サンプルについては、予後の検定を以下の指標をもとに行ったものである。

5 予後良好型：

- ・病期1または2
- ・発症年齢が1歳未満
- ・手術後5年以上再発なく生存
- ・N-mycの増幅なし

10 予後不良型：

- ・病期4
- ・発症年齢が1歳以上
- ・手術後3年以内に死亡
- ・N-myc増幅あり

15 【0123】 2. ディファレンシャルスクリーニング

各検体の半定量的RT-PCRは以下の方法により実施した。

【0124】 a) 逆転写(RT)反応

検体からのRNAをSuperScript II reverse transcriptase (GIBCO社製)を用いて、cDNAに逆転写した。すなわち、トータルRNA 20  $\mu$ g、8  $\mu$ lのランダムプライマー (1  $\mu$ g/ $\mu$ l) (宝酒造社製)、および必要量のDEPCを含む滅菌超純水で48  $\mu$ lの溶液を調製した。この溶液を65℃で15分間、インキュベートし、反応終了後氷上に置いた。24  $\mu$ lの5 x First Strand Buffer (GIBCO社製)、12  $\mu$ lの0.1M DTT (GIBCO社製)、30  $\mu$ lのdNTPs (宝酒造社製)、4  $\mu$ lのSuperScript II reverse transcriptase、および2  $\mu$ lのDEPCを含む滅菌超純水を混合して、72  $\mu$ lの混合液を調製した。この混合液を前記の氷冷した溶液に加え、総量を120  $\mu$ lとし、42℃

で1.5時間、次いで95℃で5分間反応させた。これを-20℃で保存し、PCR鑄型の母液とした。

【0125】 このように調製したcDNA溶液をDDWで適当な倍率に希釈し、GAPDHプライマーを用いて、標準化（濃度調整）した。使用したGAPDH

プライマーの塩基配列は、下記の通りであった。

5'-ACCTGACCTGCCGTCTAGAA-3' (forward:配列番号1077)

5'-TCCACCACCCTGTTGCTGTA-3' (reverse:配列番号1078)

【0126】 続いて、DDWで希釈、濃度調整した各サンプルを下記のPCR反応に供した。

【0127】 b) PCR反応

PCR反応は、rTaq polymerase（宝酒造社製）を用いて行った。前記4s期神経芽細胞腫からのcDNAライブラリーで同定された（新規或いは既知を問わず）遺伝子に対して、適当なプライマーを設計し、濃度調整した3組のcDNAサンプル集団のディファレンシャルスクリーニングを行った。すなわち、2μlのcDNA、5μlの滅菌蒸留水、1μlの10x rTaqバッファー、1μlの2mM dNTPs、各々0.5μlの合成プライマーセット（forwardおよびreverse）、0.5μlのrTaqを混合した。この混合液を95℃で2分間変性させた後、95℃、15秒間、58℃、15秒間、72℃、20秒間を1サイクルとして35サイクル繰り返し、さらに72℃で20分間放置し、PCR反応を行った。使用するプライマーセットによって、バンドが現れなかった場合、サイクル数を増加して、PCR条件を検討し、それぞれのプライマーのアニーリング温度とサイクル数を決定できた。

【0128】 このように設定した条件でPCRを行った産物を1.5%アガロースゲルで20分間電気泳動し、エチジウムブロミドで染色して、3組の検体（4s期神経芽細胞腫、予後良好型の神経芽細胞腫、および予後不良型の神経芽細胞腫）におけるバンドの濃度を比較した。

【0129】 得られた発現パターンを検体サブセット間で、まとめたものが既出の表1である。また、発現パターンの解析の結果は、既に議論した通りである。

【0130】 なお、使用したプライマーは、検出しようとする遺伝子の末端シーケンス（実施例3）をPrimer3ソフトに入力して、適当なプライマー選択条件（塩基数、 $T_m$ 、GC%）で選定した。前出の特定クローンに対応するプライマー配列は、配列表（配列番号175～1076）に与えられている。

#### 産業上の利用可能性

【0131】 以上説明したように、本発明の遺伝子または本発明の核酸から得られる情報を利用することにより、検定する臨床組織サンプルから該遺伝子を検出して、神経芽細胞腫の予後診断（主に4s期神経芽細胞腫の判定）が可能となる。具体的には、前記遺伝子若しくは核酸から得られる情報を腫瘍マーカーに利用することにより、予後診断に使用可能な、診断剤の調製或いは診断用核酸マイクロアレイを設計することが可能となる。

【0132】 4s期神経芽細胞腫の正しい診断ができれば、対象患者に治療が必要かどうかの判断の重要な情報となり、場合によれば不必要な外科手術を避けることができる。

## 請求の範囲

1. 配列表の配列番号 1 ないし 1 7 4 に記載の核酸配列からなる群より選ばれる 1 つの配列からなる核酸。
2. 配列表の配列番号 1 ないし 1 4 に記載の核酸配列からなる群より選ばれる 1 つの配列からなる、請求項 1 に記載の核酸。
3. 請求項 1 または 2 に記載の核酸に相補的な核酸。
4. 請求項 1 ないし 3 のいずれか 1 項に記載の核酸と、ストリンジェントな条件下でハイブリダイズする核酸。
5. 以下の (a) 或いは (b) の核酸を含む核酸プローブ：
  - 10 (a) 配列表の配列番号 1 ないし 1 7 4 に記載の核酸配列からなる群より選ばれる 1 つの配列の全長若しくは一部からなる核酸、またはそれに相補的な核酸；
  - (b) 配列表の配列番号 1 ないし 1 7 4 に記載の核酸配列からなる群より選ばれる 1 つの配列からなる核酸とストリンジェントな条件下でハイブリダイズする核酸、またはそれに相補的な核酸。
- 15 6. 以下の (a) 或いは (b) の核酸を含む請求項 5 に記載の核酸プローブ：
  - (a) 配列表の配列番号 1 ないし 1 4 に記載の核酸配列からなる群より選ばれる 1 つの配列の全長若しくは一部からなる核酸、若しくはそれに相補的な核酸；
  - (b) 配列表の配列番号 1 ないし 1 4 に記載の核酸配列からなる群より選ばれる 1 つの配列からなる核酸とストリンジェントな条件下でハイブリダイズする核酸、
  - 20 若しくはそれに相補的な核酸。
7. 請求項 5 または 6 に記載の核酸プローブを有効成分として含有する 4 s 期神経芽細胞腫の診断剤。
8. 以下の (a) 或いは (b) の DNA を含むプライマー：
  - 25 (a) 配列表の配列番号 1 7 5 ないし 1 0 7 6 に記載の核酸配列からなる群より選ばれる 1 つの配列からなる DNA、またはそれに相補的な DNA；



(b)配列表の配列番号175ないし1076に記載の核酸配列からなる群より選ばれる1つの配列からなるDNAとストリンジェントな条件下でハイブリダイズするDNA、またはそれに相補的なDNA。

9. 以下の(a)或いは(b)のDNAを含むプライマー:

- 5 (a)配列表の配列番号175ないし202に記載の核酸配列、および配列番号519ないし540に記載の核酸配列からなる群より選ばれる1つの配列からなるDNA、若しくはそれに相補的なDNA、または配列表の配列番号785ないし798に記載の核酸配列からなる群より選ばれる1つの配列からなるDNA、若しくはそれに相補的なDNA;
- 10 (b)配列表の配列番号175ないし202に記載の核酸配列、および配列番号519ないし540に記載の核酸配列からなる群より選ばれる1つの配列からなるDNAと、または配列表の配列番号785ないし798に記載の核酸配列からなる群より選ばれる1つの配列からなるDNAとストリンジェントな条件下でハイブリダイズするDNA、若しくはそれに相補的なDNA。
- 15 10. 請求項8または9に記載のプライマーを一組、有効成分として含有する4s期神経芽細胞腫の診断キット。
11. 神経芽細胞腫の臨床組織サンプルから配列表の配列番号1ないし14に記載の核酸配列からなる群より選ばれる1つの配列からなる核酸の有無を検出することを特徴とする、4s期神経芽細胞腫の判定方法。
- 20 12. 固相支持体に、配列番号1ないし174に記載の核酸配列の全長若しくは一部からなる核酸を複数個組み合わせ、それらを固定してなる核酸マイクロアレイ。
13. 固相支持体に、配列番号175ないし202に記載の核酸配列、配列番号519ないし540に記載の核酸配列、および配列番号785ないし798に記載の核酸配列からなる核酸を複数個組み合わせ、それらを固定してなる核酸マイクロアレイ。
- 25

## SEQUENCE LISTING

<110> Hisamitsu Pharmaceutical Co., Inc. and Chiba-Prefecture

<120> Nucleic acids isolated from stage 4s neuroblastoma

<130> FP03-029800WO-HM

<150> JP 2002-316586

<151> 2002-10-30

<160> 1082

<170> PatentIn Ver. 2.1

<210> 1

<211> 1570

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22420

<400> 1

aatggaaaca cagagcgtgt tttctgacca cacttgtaaa tagaattatg agcataactt 60  
tttttgtact taaagtttgc cctaggcata tacaagtcag ttcttctaag caagatagtt 120  
tcagttaaatt gttgttattt gcttttggat agcctttgat catatggaca gaaataaatc 180  
aggtataata aaacacacac aaagtattcc agaaaaaatt gtatttgttt ttgactaata 240  
agtaaataca actatttttc ttggtttgta ttagttttta gatatttttg aaagaatgga 300  
ttcaatcttt taaaaattaa gaggttaactg atttatgaac acagattaac aatcattttg 360  
agacattaaa aataccatct gtacatgaga aaattataat ggtaatcaac aaaatttcag 420  
tacttcccag aatctgggtt tgaaacttta ttatgtttta ggggaaaagc tctcattttt 480  
ctgtttgctt agatgagtta gatcactcat ttaaaatctg aagaagtcaa attatttttt 540  
ataaagatcc agaataatag tgtatgtatt tctaaataat ctgaatatgt ttacattggt 600  
tttttttttt taaacctagg ctaggaaggg attacctatt atctaacaaa catagtgcaa 660  
ctgtatagat aaggggcaaa cttcaaagat tggatattgt ttattatgtg aaagatacat 720  
aggctctggct atgatttgga agtcctaggt aactggttag gcttttcagg attgacagca 780  
gctgtgcaga aattttgtta aatgcttata attttaaaaa gctgtattca aaatatttct 840  
aattttcact attttttaat gtaaatgttt ttgagagtca aagaagattc tatactttta 900  
citatgaagc agtttggtgt tgtttgttca tttctttttt tggatatggg tctttctctg 960  
ttgcccaggg ccggagtatg tagtggtgca atcacagctc gctgcaggct taaactcctg 1020  
gtctcaagcc atttttctgc ctacgccttt ctagtagctg ggagtagagg caaatgctac 1080  
tgcccgaagc taatttatgt tttattttta tttttgttag agacagggtc tcgctgtgtt 1140  
gtgcaggctg atctctaact cctgggctca agctatctcc ccactttgcc tcctcaagtg 1200

ttgggtttat aggcgtgagc tatggtgccc agcctgaggc agtcttaacg ataatttgtt 1260  
ttttctgatac aaaatctacc aaaatggccg gctgcgctgg ctacgcctg taatcccagt 1320  
actttgagag accgaggtgg gtggatctct tgaggtcagg agtccaagac cagcctggca 1380  
aacatggtga aaccccgctct ctactaaaaa tacaaaatag cggggcatgg tggcatgcac 1440  
ctgtaattcc agctactcgg gagactgagg caggagaatt acttgaaccc aggaggtgga 1500  
ggtttagtagca agccaagatc acgccactgc attccagcct gggcgacaga gtgagactct 1560  
gtctcaaaaa 1570

<210> 2

<211> 2400

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22689

<400> 2

gaaacaaaa ggagacgaag gacgcatgcg ttggtgagt cccggattct ggtgggttct 60  
tccgctcagg ctgggtgaag cgcttcgggg tcgccgccgg cagcagcctc ccggcgcgat 120  
gaagacactg aggctcagag aggttaagt actcagccaa ggtcaaacag ctagtaagt 180  
gtggagccag gactcaaagc caggagccat gtccacttg tccccctcac tcttcctcg 240  
tgtgactgag actctgtggt ttaatctgga tcgacctgt gtggaagaga cagagctgca 300  
gcagcaggaa cagcagcatc aggcctggct ccaaagcatc gcggagaaa acaacaacct 360  
ggttcctatt ggcaagccag cctcagaggc ctgtagggct tacaggctct gtccctgcca 420  
ccagcactat gatgacgagg aagaagagga tgatgaagat gatgaggata gtgaagagga 480  
ctcagaggat gatgaggata tgcaggacat ggacgagatg aatgactaca atgagtcacc 540  
ggatgatgga gaggtcaatg aggtaggcaa ggggtatggg ggagggcctc tgttcctgga 600  
cccttgctcc tgaccaggtt gatggccaag gggtagcaga accctggatc cagccagggg 660  
caggatctgg ggctgaggct ggctgaggcc cctccccacc cacaccacgc ctctctcca 720  
ggtggacatg gaaggcaacg aacaggatca ggaccagtgg atgatctagg tagagtatcc 780  
acagtaggtt cccaattcca gcacacaagc aggggccttc tctccacca gccgcatcag 840  
gatctgacct atgaggggag atggctgttg cagaagacat gggagatgga tgcagggccc 900  
ctgataaaa atattctaaa tgcctacctg cctcactgca gctccaacc agccggggtc 960  
tcatctgtct cttgtaccat agccccagct gccctcctgg tccccgtctc ctacagtga 1020  
gtcttcacac cagccctgga atttttccaa caaatctgac cttattactc cttggtcct 1080  
gtgagctgaa ggcctttggg attgaacttg ggattctcag cctggcattc aggaccttg 1140  
acctgatcct atcctacctt tccaggttca tctctcagta cttccacct gtggcctgta 1200  
tcacagccat cccaaacaac tgtgccaga atccatcaag ctgtctcatt ccttcattgcc 1260  
acatgtgtat atgtggctgg ctttgccctt cccacccccca tcgcatctg cctggccaac 1320  
tcagaacttc cagattcagt tcaaatgttg ctctttctcc atgaagtccc aggcagaaac 1380  
aaccacccta tctttcagat ttatgaaagg tctctgttag aattttagt ttcatccccc 1440  
ttttattgct catcaaatgt atttctgac ttggaattgg atgaactttt atttatttat 1500  
ttttgagacc aagtcttgct gtgttgcca ggtggagtg cagtagcatg atcacggctc 1560  
actgcagcct tgaccacca ggctcaggca atcctccac ctcagcattt ccagtagctg 1620  
gaaccacagt tactcaccac cacaccggc taatttttaa atttttgta gaaacggggg 1680

tcttgctttg ttaccaggc tagtctcgaa ctctgggct caagtgatcc tctgctttg 1740  
gcctcccaaa gtgctgggat tacaggcatg agccaccatg cccagccagt gaatttcttt 1800  
tcttttcttt ttcttttttt ttttttttg agacaggttc ttgctctgtc acccatgctg 1860  
gagtgcagtg gcacaatcac agctcactgc agcctcagcc tctgggctc aagcaatcct 1920  
cccacctcag cctcccaagt agctgggacc acaggcatgt gccaccatgc ctgggtaatt 1980  
tttgatattt ttgtagagat gggtttttgc catgttgccc aagccggtct caaactcctg 2040  
agctcaagca atctgcccac ctggcctct caaagtgtg ggattacagg caccagccac 2100  
cacacagccg aatttcttaa ataagacctt aaaagcactt atgctgggat tgagataaat 2160  
ccaggcagac agctacccta aatggatatgt ggaagcctcc atgggtggaga ggaaagatgt 2220  
ggagacagat aattacaaag ctatgggtta tctgtgaga tggttattcc actgtgtatt 2280  
atggttcctt tgaggccagc atttgggct cattcatctc tgtggcctct acccctctcc 2340  
ctggcaccta gcacattcct aatacaaaag aggtggcaat aaatgtttgc tgaataaaaa 2400

<210> 3

<211> 1958

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24135

<400> 3

gaggcctggg gtggggacgc gaggacacca gcgtagaaga gcttacatca gaatcgagct 60  
ttgtgggcgc tccgggattt ggcccttttag cgcggatcct agacaacagg ttttgacct 120  
cgagagctgc agaactgagg ctactgggtg cgcagcctg ctggctcgc ctctgcctca 180  
gtttcttccc ctatggcccg cgtgccgctg gggcggagtc tactctgtc acccaggctg 240  
gagcacaatg gcatgacctc agctcaccac aacttccgcc tcccaggttc aagggtattct 300  
cctgcctcag cctcccaagt agctgagatt ataggcagtg aacccttga gcacggggcc 360  
cgcgcctggc ttgttctcgc ctgtctccag cacctaggac agggcctggc acgaagtagg 420  
tgacacagtga gtagtgaatg ctggagtga tagatgcaag agggctggtg tcttttagaa 480  
agcagcgctc agtggctgag aactcctggg ttccctgctg ggcaagggtt aggcgtacat 540  
ttgccagggt gttaaaggag gaacgcaggg ttcaaatccc agctccactt aacctcccc 600  
acactgcggc gacgccgcgc ttttttccg acccaactga gccggaagtg gaggcgcggg 660  
cttcccatga tgccccgga gacctttatt ctaaccgaa ggagtagcgg aggggaggtc 720  
gtgatggcgg cgccggaggc ggaggttctg tctcagccg cagtccctga tttggagtgg 780  
tatgagaagt ccgaagaaac tcacgcctcc cagatagaac tacttgagac aagctctacg 840  
caggaacctc tcaacgctt ggaggccttt tgcccaagag actgcatggt accagtgggtg 900  
tttcttgggc ctgtgagcca ggaaggctgc tgtcagtta cttgtgaact tctaaagcat 960  
atcatgtatc aacgccagca gctccctctg ccctatgaac agcttaagca cttttaccga 1020  
aaaccttctc cccaggcaga ggagatgctg aagaagaaac ctcgggccac cactgagggtg 1080  
agcagcagga aatgccaaca agccctggca gaactggaga gtgtcctcag ccacctggag 1140  
gacttctttg caggacact agtaccgca gtgctgattc tcttggggg caatgcccta 1200  
agccccaagg agttctatga actcgacttg tctctgctgg cccctacag cgtggaccag 1260  
agcctgagca cagcagcttg ttgcgccgt ctcttccgag ccatattcat ggctgatgcc 1320  
tttagcgagc ttcaggctcc tccactcatg ggcaccgtcg tcatggcaca gggacaccgc 1380

aactgtggag aagattgggt tcgacccaag ctcaactatc gagtgcccag ccggggccat 1440  
aaactgactg tgaccctgtc atgtggcaga ccttccatcc gaaccacggc ttgggaagac 1500  
tacatttggg tccaggcacc agtgacattt aaaggcttcc gcgagtgaat gagtgcttct 1560  
taatcctaaa aacacaatgg ctgaattatc tttctccatg tggcgctgaa tcacccatct 1620  
ggtttggagc tagagttgct tcctgggtgag agaggaagca actctccttc tggttgtctg 1680  
cctccccctc gatttctga taggctgatg gcatgtggct gtgactgtga ctgtaatcat 1740  
tgctgaacaa catctctttg aatcaaaggt tgattttccc agagggtgct gggtcaggca 1800  
tttctattag gagtggaaa gcaaaaatgg gtccatagac actctatgga ggtgtccctt 1860  
tctgctcttt gctgtgtcct ttcagaattt ttaccaggaa cataatgtgg atgtgactta 1920  
tgaacttaaa tataaaataa atagattctt attaaaaa 1958

<210> 4

<211> 1436

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a24350

<400> 4

agtccgggtg gtttcttccg accgaccgtc agcactcgac aaataactga gcagctgctg 60  
gggcccggaa caccgcgggg acaggccctc actgtgagga taatgaccat accgggtcct 120  
gggagacctc ctgaactgca gcggcaggga accccgacac ccagtgagtc tgagagcctc 180  
acagctgccc gcctggctga ctcccatcag gtctgaagca cctcccgcac agtcatgggtg 240  
gctgtttttg tcttcccag gagaaatgaa tggcactggc aacctgggccc tcgtgcctgt 300  
tttctgaag ccatgtgtac ttggcttctg gaccgtggcg cacctgaccc cagaaggcgg 360  
tgcacttact gtaaggctga tgggccttag agaacacctc cccagcgccct acgcgcaatc 420  
aggaccgcgg acgcctcatg tctgcctggg aggtctccaa agggccaaac actcccggac 480  
tcggccctgc aggagtcatt tgctgtagac catccccag tgccacatac cactggagaa 540  
agctgagtc agaggagctc aaactgaaa acacaatctc tctggagggt caaggcctgg 600  
cagggcagcc tgaatggaat ccaacgttac ctgtgactaa gagccaaact ggagtgagac 660  
aagggtcctc tggctctcct ggatgacggg agatgcgcgc ctcactgtgt gatgtcaaga 720  
accactgctg ggcctaccct gagcagggag caggagcgg cactgtcatg cttgttgctg 780  
gagccagcaa aggatgaggc tatgcctcag cttccgctcc gctccactca gtgctggcct 840  
catcgcccca cccagggggc agaactctcc ccaggagccc acggtgctgg gcagaggcag 900  
aggccacttg ggcggtcagc ccagagctgg gtgggcccgg ccagcgggac tttgcggcct 960  
ccccaccctc cggatctcct gatcaggcgt aacccaaccc gggcagctcc ttcggctcca 1020  
ccatccagag acaagctgac ttccgataat gactttattt taacatattt aattacagac 1080  
ataaaatagc tggggagggg ggtgagcccc agcctagccc caccatgggg ctataggagg 1140  
ggaggcgcag gcggggcccc cctgctgacc ctctctctgg ggtcttctt atggcggggc 1200  
cctattgctt gagtggggga ggagccatgc aaatgagggg ggcagggcag cactcggcc 1260  
ccacccacc ccgaggacgg cctccccaca gaatgcccag gctgtgcccc cagccccagc 1320  
tgctccacct cttcttctc tgtccaggga gcagaccctc tggccagccc ctgactctgc 1380  
ccctaccccc tctgcaaac taaaggggaa taaatacaaa ctttacaag taaaaa 1436

<210> 5  
<211> 3062  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nbla23701

<400> 5  
gagaggcggg cgcctaccag ccggcagctc cggagctgcc cgcgccatgt ccgcgcacaa 60  
tcggggcacc gagctcggta aggggcccgc ggggctcccc atcccctctc cctcgcgttc 120  
agcgcgcgag ggactagcgc ggggcctgct gccgccaggt gccctggctg tgggtccccg 180  
aggggttttc gctggggcgg gaagcagtggt cgtctgggtca gccctcacc caagtaaagg 240  
ccgaacccgg cacgttcgag ccgttgttct ttgcacctaa gcttttactc tggatgcgg 300  
aaggagtagg aaagggttag attattatct tcctgccttt tcgttcactc tagctcgtg 360  
gttggaacac ccaacaaccc aaaaaacaaa acccaaaaca aacaaccccc aagcaggtaa 420  
aaacagataa aaaccttctt tctcctcctt ttaatagaat acttgtgtaa tttaatgcag 480  
tatttccgta gataatttta accgtaacct tgaagtggcc gtgctcgtg aaaagttgtc 540  
agccgtctgt gtcacaaatg taacactgca gattcatggg atttttagagt tacaagatt 600  
tgtaaagta cctgtattat ttccagttt tcatcttttt ttatattgtt caaatactgg 660  
caagaaacct tagttcagat ttcttttttt ttttttttta ttgatcattc ttgggtgttt 720  
ctcgcagagg gggatttggc agggtcagat gacagtagtg gaggaagggt cagctgataa 780  
acaagtgaac aaaggtctct ggttttccta ggcagaggac cctgcggcct tccgcagtg 840  
ttgtgtccct ggttacttaa gattagggag tggtagtgac tcttaacgag catgctgcct 900  
tcaagcatct gttaacaaa gcacatcttg caccgccctt aatccattta accctgagt 960  
gacacagcac atgtttcaga gacacaggg ttggggataa ggtcacagat caacaggatc 1020  
ccaaggcaga agagaatttt tcttcagatt tcttaacatg tgaaaaattt ataattcaa 1080  
cagcaaaacc atgatcaaga gaaggtttta gcgtctcgtt taagtattat agcttggata 1140  
tctgtgtatc caggatcttt aacttcttac ctgtgtgact tcggacaaat taataacttt 1200  
gcgttaagt ttcttcact gtaaaatggt tatttttagt gtagttacct tataaggccg 1260  
ttaggagatt aataggata catgtaaagt agtttggat attgtggaca cctagtaagt 1320  
cttcagtata gatagtata gtatatggag ttatggtttt aggggctaatt ttgagaaaa 1380  
ttggctgtaa attatattga acacatacag gtaggtcctt ttcgccctcc ttaaaagtga 1440  
ctggtactta aacagctctg acttccaaga ggtgttctgg atttttgtc gaatggtgag 1500  
agagtaaata tatcatttta aagacagttg atttactaac ctggttgatt ttgttttagt 1560  
cactgtctc tagctgatta tgttttaaac tctagtccta tctctggaac gtggtcttta 1620  
gtaataacgg cattatttct tagattggaa tacccttgaa ggtggtggat atggggcagg 1680  
tttgggggtg tgtcttacct gggatttccc aggaatatga ccatgtgact atgcatacat 1740  
caaggatgtg ccctaaattt cccaaaactt agacatttta aatttttctt tcaaaaaaca 1800  
taattgaacc atttttaaat ttatttattt gcagtaatta gaatcaatca cttccattca 1860  
ttgttgaaa agtaatagac ataaataatt gccaggtaga acaatagtaa atgtggtttt 1920  
tatgcagcta tcgaaatgat catagctttg tatttattat cttatttgtt aaaatcagat 1980  
tttttctct caggggtatt aatccttaat ccaaacaggt ttaaaactgaa atgctaaaat 2040  
aagttatttg aattaggtac tagggaaaaa aatctttcag tattaattta tgcagtatat 2100  
taactgatga ttttaaaat agttttctaa ttgaaagtct ttttaataaa catcgttaact 2160

aatttctaaa ataaattaac atttttgctt cccttttctt attacaaaag gaattcatgg 2220  
ttattgtaaa aattctagaa aatacagtta gcacaaaaat gttgtaatat tattactagt 2280  
ccaatcactg ttatttatga tttgggtgat gtacttctag ttcattggact taaaaaaca 2340  
ttgagttcct ttgagactaa acctgaccct catgattaaa aagtctttta ggaaaacatt 2400  
ggcatttgga tgtatgaaag atgttttcca aatagggaat gtaccctcta gctttcatat 2460  
tagaggatgg ggcccagcat tctgagtttt aacaaatcct gtgggtagta ctgaagcata 2520  
cccaagtttg agaaccaatg gcttaatgat ctccaaggta ctatcaagtt ttgtacctag 2580  
actattatgc cctatatagt ctattaaaat gtacagatat tcttctatct tattagatgc 2640  
cacttaacta ttgcctaaaa tgcagggtgc acgtgggtag tgatctttct tttgttact 2700  
gatgtgtccc aagtacctag aatagtgttt ggtacacaga aggccctcaa aaatgtcttg 2760  
aggctgggca tgggtggtca tgcctatagt cctggcactt tgggaggctc aaggcagccg 2820  
gatcacttga gatcagaagt tggagaccag cctggccaac atggcaaac cctatctctg 2880  
ctaaaaatac aaaaattagc tgggcatagt ggcgcatgcc tgtagtccca gctacttggg 2940  
aggctgaggt acgagaatcg cttgaaccca gagagtggag gttgcagtga gctggaattg 3000  
tgccactgca ctccattggg caacagactg gagacagact gtgtctcaaa aaaagataaa 3060  
aa 3062

<210> 6

<211> 2900

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a23890

<400> 6

agcgccgagg cggtagcttc agcctgcaat gagaggaacc cgggagagcc cccgggagcc 60  
agcgaagagc ttggctgctg cgtccagggc tgctgctgcc gccgcggctg cttgaaactc 120  
ctcaaagttg agagccggct agagggtgcc gcccgccggg agccggaggg aaaggaagtc 180  
ggaaggtgca agagtgcag acacggacag acggacgcgc agacctcgg aaggcactgc 240  
gtaggcagcc tccccggagc ccacgaggct cccagcacc gttcactggt gggaggctga 300  
gccggtggaa aagacaccgg gaagagactc agaggcgacc ataatgtcgt tacgtgtaca 360  
cactctgccc accctgcttg gagccgtcgt cagaccgggc tgcagggagc tgctgtgttt 420  
gctgatgatc acagtactg tgggccctgg tgctctggg gtgtgcccc cgccttgcat 480  
ctgtgccact gacatcgtca gctgcaccaa caaaaacctg tccaaggtgc ctgggaacct 540  
tttcagactg attaagagac tggacctgag ttataacaga attgggcttc tggattctga 600  
gtggattcca gtatcgtttg caaagctgaa caccctaatt cttcgtcata acaacatcac 660  
cagcatttcc acgggcagtt ttccacaac tccaaatttg aagtgtcttg acttatcgtc 720  
caataagctg aagacgggtg gaaatgctgt attccaagag ttgaaggttc tgggaagtgc 780  
tctgctttac aacaatcaca tatcctatct cgatccttca gcgtttggag ggctctccca 840  
gttcagaaaa ctctacttaa gtggaaattt tctcacacag tttccgatgg atttgtatgt 900  
tggaaggttc aagctggcag aactgatgtt tttagatgtt tcttataacc gaattccttc 960  
catgccaatg caccacataa atttagtgcc agggaaacag ctgagaggca tctaccttca 1020  
tggaaaccca tttgtctgtg actgttcctt gtactccttg ctggtctttt ggtatcgtag 1080  
gcactttagc tcaagtatgg attttaagaa cgattacacc tgtgcgctgt ggtctgactc 1140

caggcactcg cgtcaggtag ttctgtccca ggatagcttt atgaattgct ctgacagcat 1200  
 catcaatggt tcctttcgtg cgcttggctt tattcatgag gctcaggctg gggaaagact 1260  
 gatgggtccac tgtgacagca agacaggtaa tgcaaatagc gatttcatct ggggtgggtcc 1320  
 agataacaga ctgctagagc cggataaaga gatggaaaac ttttacgtgt ttcacaatgg 1380  
 aagtcgtggt atagaaagcc ctctgtttga ggatgctgga gtgtattctt gtatcgcaat 1440  
 gaataagcaa cgcctgttaa atgaaactgt ggacgtcaca ataaatgtga gcaatttcac 1500  
 tgtaagcaga tcccatgctc atgaggcatt taacacagct tttaccactc ttgctgcttg 1560  
 cgtggccagt atcgttttgg tacttttga cctctatctg actccatgcc cctgcaagtg 1620  
 taaaaccaag agacagaaaa atatgtaca ccaaagcaat gccattcat cgattctcag 1680  
 tcctggcccc gctagtgatg cctccgctga tgaacggaag gcagggtcag gtaaaagagt 1740  
 ggtgtttttg gaacccctga aggatactgc agcaggggcag aacgggaaag tcaggctctt 1800  
 tcccagcgag gcagtgatag ctgagggcatt cctaaagtcc acgaggggga aatctgactc 1860  
 agattcagtc aattcagtggt tttctgacac accttttgg gcgtccactt aatttgtgcc 1920  
 tatatttga tgatgtcata attaatctg ttcataattt actttgtgtg tggctctgaa 1980  
 aataaacagc aggacagaaa ttgtgttgtt ttgttctttg aaatacaacc aaattctctt 2040  
 aaaatgattg gtaggaaatg aggtaaagta cttcagttcc tcaatgtgcc atagaaagat 2100  
 ggggttgttt tccaaagttt aagttctaga tcacaatatc ttagctttta gcactattgg 2160  
 taatttcaga gtaggccccaa aggtgatag actcccatg tccctttatt taggatattg 2220  
 aaagaaaaaa taaactttat gtattagtgt cttttaaaaa tagactttgc taacttacta 2280  
 gtaccagagt tattttaaag aaaaacacta gtgtccaatt tcatttttaa aagatgtaga 2340  
 aagaagaatc aagcatcaat taattataaa gcctaaagca aagttagatt tgggggttat 2400  
 tcagccaaaa ttaccgtttt agaccagaat gaatagacta cactgataaa atgtactgga 2460  
 taatgccaca tcctatatgg tggtatagaa atagtgaag gaaagtacat ttgtttgcct 2520  
 gtcttttcat tttgtacatt ctcccatc tgtattcttg tacaaaagat ctattgaaa 2580  
 atttaagtc atcataattt gttgccataa atatgtaagt gtcaatacca aaatgtctga 2640  
 gtaacttctt aaatccctgt tctagcaaac taatattggt tcatgtgctt gtgtatatgt 2700  
 aaatcttaaa ttagtgaac tattaaatag accctactgt actgtgcttt ggacatttga 2760  
 attaatgtaa atatatgtaa tctgtgactt gatattttgt tttatttggc tatttaaaaa 2820  
 cataaatcta aaatgtctta tgttatcaga ttatgctatt ttgtataaag caccactgat 2880  
 agcaaatctc tctccaaaaa 2900

<210> 7

<211> 2708

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21650

<400> 7

atccaaaaga ttatcatttc aacatgcaat cctattttta aaataactag tgaggtacct 60  
 gacaaaaaaa aatccctttt cataactaagt ccagaagatc tttgtgtatt ttatactcat 120  
 aggacatctg agtttggatg ttaccttttt attggaaata tgggatctgt acttagattt 180  
 cactgaattt acattgaaaa ggtaggttca cataaccaag ttgtctcaca cgttcctaaa 240  
 tgttttctgg taactggatg gagtatcagt ttttatattt atctttgcat tagctaaaaa 300



acaaattaat agttcaggtc ctcagccgca cacaggcagt tttctccacg gtccaaattg 360  
ttgccgaat tcaccagac cccgtgtcc tccgttttt catgcagaca ttcaaacaac 420  
tgccctccctt cctcctggca cccctcctgg caccctccatc ccatcgccag cagcctccaa 480  
accagtttcc ctcctgtcct catctcagcc acccatgact cacacacaca tctgtctccc 540  
ctggccact tttcacctgg tcctcataat ctatgcataa acattaacgt accacaggtc 600  
aatctgcata ctgattactt ctgctctggt caaattcttg ctttcaggat caggaggctt 660  
tctccccaca ccaaactggg cctgaggaaa tagtgtcttg tcttcctgtc acccctcccg 720  
tagttgcatg tctaattgaga caaggggtgt ctcagggtgaa gcaggacagg gaggatgcca 780  
gcacttgggt ggtagagggt tgaggagtgc ctgttggggg atgtgttggg gaaggaggac 840  
ttttcacata tggtcattg tgcgggatg atttcgttgt taaataagca cctacaggat 900  
gatttcacat tccatacttc taagttttta taatttaa tctttccgcc aggttgggtt 960  
ttttttttt tccaaacttt aaatctgtgg ctagaattgg tttgatttac ctaatcctgc 1020  
ccctgagatt tagccctatc cctgagagcc cctcagagc caccacagc caggacacct 1080  
ctgtggcct ccccttcccc agccttccaa ctgtggcag gccccggct ctggcctccc 1140  
cctatatggg aatgagccag ctgcaccgt gctgacagt gctgggataa tcctccctga 1200  
gctgttccaa ggattagtc tgctgccctg tgcccagctc ccacacaacg gggtttcggg 1260  
gctgtggacc ctgtgccagg aaaggaagg cgcagctcct gcaatgcgga gcagccaggg 1320  
cagtgggcac caggctttag cctcccttc tcacctaca gagggcaggc ccttcagctc 1380  
cattctctc caaggctgca gagggggcag gaattggggg tgacaggaga gctgtaagg 1440  
ctccagtggg tcattctggg ccagagatg ggtgctgaag ctcccacgcc tgctgtgaa 1500  
aatggagtcc tctctcacct gggagagcca ggtgctgccc cgagaaggat gcatttatgg 1560  
cttcatgaag tctttcctga ccccgatgc tgctgactat aggtagtct gagcaaatct 1620  
gggggagcct catcttggca tgagaaagag atggcttctt ctaagccac tggccgtgat 1680  
cccaggatta taacacattc tggctcaagt ccagactatt tgtagaacac aggagatcct 1740  
ccatgagagg tagtataata tagaggatat gtgtgcttac taagaggctg cctgtctgac 1800  
cttgacaag tcttttttat ttatttattt atttttata gagacaaagt ctcactatgt 1860  
tgctcaggct ggtcttgaac tcctggcctc aagcgatcct cccaccttag cctcccaaag 1920  
agttgggatt atagacatga gccactgcac ctggccgacc ttgggcaagt tcttaaacc 1980  
ttcaaagcct cattttctc caatcataaa agggaaagat ggtaatat tcccctccaa 2040  
attcttgtaa gtattaaaca ttgtatatgt attttgaaca cgattaagct ctaaacactt 2100  
gttaggaagc aggagtagca tttgaaacaa acagctctt tcccacagg cggatgccct 2160  
cacagaattg agattatgta cgtaaaacac cagggtccta acccggcaca gagcaggagg 2220  
gctaagcgtg acatccagca cgtggtcagt ggaatccagt attcctacc acctctctag 2280  
tctccctcc accctctcc ctttcagagg caccaagctg ctgtgtgtct tgtctattcc 2340  
cactccctgc ctgactgaac attttctcca cctcctgatc atcagcagca gaaactggct 2400  
gctcttctc ctgggtagac agccagactg tatttcccag ctgcccctgc agtgagatgt 2460  
ggccatcgga gccagcattg gccaatggac tctgcatggg agtgacgcat gctgcctcca 2520  
ggcttgtccc taaaacctcc cacgtgtcct ccgctgtc tcccacttc caaggagcac 2580  
ggcaattgtg gaagaccag attagtgtg gcagaacat agatgggagg aacctgggtc 2640  
cctgacttaa agtatcatg atttgatgt tcccttagtg agaaataaac ttccattgtg 2700  
tttaaaaa 2708

&lt;210&gt; 8

&lt;211&gt; 2312

&lt;212&gt; DNA

<213> Homo sapiens

<220>

<223> nb1a22094

<400> 8

```
gctttttcaa tttattgata tggtttaaatt gctccacag aattgtgtga gagagcaata 60
tgtcattgat tgaagaagg gaaacaaact ggtagtaatg gtcaggattt ccccttttca 120
gaacttttgt gcatitgaag tgcctgacaa tgtagtccag cttccctcct gttttaccta 180
gagggctgga gatagtggg cccaaagggg ccacaactgt tatcttaagt ggactgaaag 240
gaagacgaaa ttaaaactag cttctactcc actttagga aatgtgcttt taatctttgg 300
tgtagccag cttcttagga acaaaagtat cctatgttg caactgcagt aaaaaacag 360
ttatggagag tatggaggag agccagtaac tcctaaaggt cttgttcctt tgacttttct 420
tctcaacaa acatgagata ttcataaatt gcaatggcaa acgtttttta gggtcgccaa 480
tatgaaatg taaagcagtt ttaagatgat taatattaaa ataggccaag tgcggtggct 540
cacaactgta attccagcac tttagagacc caaagtggga ggatcactg gcctccgaag 600
ttcaagacca acctgggcaa cacagatgtc atctctagaa aaaaaaaaaa tttttttttt 660

taattggccg ggcatgggtg catgtgcctg tggctcctag tactcgggag gcttaaagcc 720
gggaggcaga ggttgccgtg ggccgggac gcgccactgc actacagcct gaccgacaaa 780
gcaagactca gtctcaaaaa aaaaaaaaaacc aaccaacat tcaactaagt catgtaagca 840
aatctaccct ggttgtccca aattgggatt caaccacttt agaagtcttg ttagacattt 900
tttcagtga tacataatag ttgtatgtac ttaccgagca tgtgatattg atatgtgcat 960
acaatatata atgatcacat cagaataact ggaatatcca tcacctcaa caatgatcat 1020
ttctaaaaga acattccaaa gctgctcttt tagctgtttt gaaatataca ataaattatt 1080
aattgttga aaacttttga aagttatctt taagctgctt ttttgacaa gaggtatata 1140
attgcaatac agatggatat taacttcac tgtatatctt attaaagctg gtaaaatttt 1200
tttaaggat ctaaaatttt gccatgtaag gaacttaagc atctttatgt ttaattgcaa 1260
aatttttata ttccaatat aaaaatttct cttcaagtat ttctgcatt gccatttttt 1320
agcatgtttg gctattctgc tatgtaacct acctagtgt actcgtgga gacagtccgt 1380
ctacaggcat gtctgatagg cacaagttct ttattcacac aaaactaaca tatagagtag 1440
aatttatggg atgatgatgt cgtttgggat agaggatagg aaaaaactgc attatgtcca 1500
aaactttact acagtggagc cagtcaacat gtgtacaact taacaccta caaaaatggc 1560
tccaaaaagt atacatagca ctatttctgt tcatccatc tgaatggaaa attttactta 1620
gctggtaatt ctcaaatgt tttgttgact cagggaagg gaaacatatt ttacatgcac 1680
agaatgcttc agaacttttc tgctcggcta ccaatctgcc atgtagggtg ataataaaag 1740
tcctaaagta cagtttagtt ctttgggcct acaggacac cttgttgact aactggcttc 1800
agccaatttt tttcagttca cacacaagat caatttcttt gtcagcaaat accttttaga 1860
aaaagtacac tacaaacaca cttggaaaac attttattaa gtactgtata aacagctatt 1920
tagataataa ttgcatagaa ctataccaag gtaattgtgt cttaaggaa caactaccaa 1980
gtgaacaaga tgagcaaagt cctctattat acaagatttc cttcggtgga acattatggt 2040
gacaaagcag cgtaatgagc tcttaagcag attgatTTTT atcaactgg acatatcaga 2100
attccttatg tataagagaa atatgcacat gtcctttca agaaaagagt gataaccac 2160
catggaatta cctccagttt aaacatgtac tcttgactgc caaaaatata gagatatgtt 2220
aagcaagata aagcagcaga acacgttta aaatatgttg atctctttct gtaatctaca 2280
tgtaatatatt aaatgttctt atccttgaaa aa 2312
```

&lt;210&gt; 9

&lt;211&gt; 2110

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla22739

&lt;400&gt; 9

tagctttatc actttttctca ttccatatga ttgtttcttt agttaactag cccttgaaaa 60  
cttcatttta ggacttattt gttttaatgt acagatgtgg gaaaaccaca caaattccgc 120  
agtttattct ggatgattct ctgagtggac cacctgagaa ggtagccaac atcatctgta 180  
cccaaccccg acgaatctct gcaatctctg ttgctgaacg cgttgctaaa gaaagagcag 240  
agaggggtggg tctgaccgtg ggataaccaga ttcgggttaga aagtgtcaag gtttgatgc 300  
tctgcttatt tcctggtaac agaaatttat ggttttagg tataaaaagt tttgggggtt 360

aggagattca tgggcaattt gggatatata ctttcagggt atttttaaat taatgattac 420  
ctttggtaat catttattta aatatttaga aatatttaga aatattttgg tataagaact 480  
cttatggcca ggcgcggtgg ctacacactg taatcccagc actttgagag gccaaaggcag 540  
gtggatcacc tgaggtcggg agttcgagac cagcctgacc aacatggaga aaccccatct 600  
ctactaaaaa taaaaaatt agccgagtgt ggtggcacac gcctgtaatc ccagctactc 660  
gggagtctga ggcaggagaa tcccttgaac ctgggagacg gaagttgcaa tgagccgaga 720  
ttgcgccatt gcactccagc ctgggcaaaa agaggaaaat tctgtctcaa aaaaaaaaaa 780  
aacaaaaaaaa ctcttatttg gttgtactaa atttcctctg taaagctttt tattttttat 840  
tggcagaagt catctagtaa agactgtttt gctcttgaac ttgggacata atccatttaa 900  
ccaaataagg agcagacaga ttgagaactg ttttcattat tcaactgttt ttaatgcttt 960  
ttatgaaaaa cttacattg tgatatgaag tagaaaggct tttattactg tccctggcaa 1020  
gaaactatgt ttagtatggt ttcctattaa atggaactgc tgggtgttcc aatatttttt 1080  
atcactatcc attcaaaatg gctttccagt aatgtttcct ttttttgaaa attttattaa 1140  
tgatttatat tgcccttca tgtgtaagtc ctacagccacc agactgttat actgcaccac 1200  
gggagtgtg ctgagaaggc tagaaggaga tacagctcta caaggagttt cccatatcat 1260  
tgttgatgaa gttcatgaga ggacagaaga aaggtaaaac aaagactttc ccagggaaca 1320  
cacactcacc tgaattgaag gcatggcaga aaaaattgtt ttctagtcc aattcagttt 1380  
catgcagcta gtaattgtaa tttgccacaa ggaaggccta tgtagagaa gagcaactgc 1440  
tttcttgatc tccagggtct gtaacactaa aaaggacagc acatgctcat cacttattag 1500  
atggagtcac cctgttaggt tagaaggat acttcacacc atcctgggca ttatgctaag 1560  
ttgaataacc tacttagtag aaataacaga tgtcatgcat gctgtggctg aatgtatctt 1620  
cttccttggt tatttggcca ttcagtcctg acattgattc atgtatttat tgagcctgca 1680  
ttaaatgcc aagtatatat tagttgctgg ggatacagtg atgaacaagc atgtatggct 1740  
ccccctcatc tcttacagtc cagtagaaaa aacaaataat gaacaagtaa acaagcaa 1800  
gattgtaaat tggaataagc actatgaagg aataaacggc atgctgtgtt tggagggaga 1860  
gacctataga tgctcaaaga tcatatctct gtaagatgac aatttaaatt caaaactgaa 1920  
gtatggccgg gcgcaatggc tcacacccat aatccctgca ctttgggagg ccaagggtgg 1980  
aggatcgctt gagctcagga gttggagccc cacctgggca acatagttag accatgttcc 2040

cacgaaaagt aaaaaaaaca aaacaaaaca aaaaatagcc agtagtcatt ctactgggga 2100  
tacagaaaaa 2110

<210> 10

<211> 2416

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23525

<400> 10

tcactatggc ggttggagga acggcagtg tccacacgtcg gctgctggga agatctggat 60  
tctcgtttca ggtttcgggg tgggggtggg gagaaagggt cgatgatttc cttttttcgt. 120  
cgggtataga cgggattacc tagtgccttc acaatcggtc agagctggat tcagattcct 180  
gctcgccaac gccagcttg ggcaaggctc ctgttctttc tgtgtctcgg tttccatgtt 240  
tgtaaaatgg tgataataat agtatctacc tcagagacgt gtactgtata atagtgcgta 300  
taaggcacgt aatgtgaagc ctggcccctg aagatattag ctattgttat ggagataaat 360  
aatacgcgta atagaatgag aaaaattata aattatataa attcgcctaatt ttagtgccc 420  
tttctgccat caacttcttt cctagaataa attaaagata aaatagatat accaattttt 480  
accaatgaaa taatttgta tttgggaatt gcctcaaaat agcagagatt gtaattttcc 540  
tatattgaaa agttaataa aagggtgggg ggggggagtg caagaaagaa agagatggag 600  
aacgagagcg agctggagat gaaccacatg cgatgagtag gccttgtttg gatcctgaat 660  
cgaacacacc aactgtaaaa atatgtttta gacgcacg gaaaattggg acacggattc 720  
gatatttgat gttttttagg gaattgatgt cagttttttt aggcgtcaca gtagtattgt 780  
gattatgttt tcaaattgtc cttttttgta gagacatacg aaaatattta cggattaaat 840  
aatgtctggg attggcttct aaatacatta atgactagga ttgtctcaa aataatctca 900  
gcggtagggg gaaatgggga ggggtataga tgaacaaaaa ttggccctaa attaataata 960  
tttttttgct gagtgatagg cagtgggttg cgtatattaa tctgctttcc ttggtatacg 1020  
tttaatttt tctataataa aatacagaag tcagatattc cggtagcctt gaaaaagtcg 1080  
ggggtggggg ggagcagtg gtgggttat agatgaaaca agatggcctt cagttggtaa 1140  
ttgttgaaag ctggatgatg gattcgtgta ggtttataat actatttctt ttttatttca 1200  
tccatttgaa attatattta aggaaagtta aaaaacaaat ttgtcagaaa ttatacaa 1260  
gtacaataaa ttaaatttga aaatgtggcc acaagaaagg aaaaagaaac acttgtacat 1320  
tatttatcag ctttgggtgc ctttgtgtgt gatgaaattg cattggctga ttagaagaa 1380  
agccatatct catatctttt tattttatgt tctttcttgt cttttgttt gaccttctag 1440  
gtcaccatca gaaaagctaa gtttgcgtga tagtgaggat caggagatct gatcctgatt 1500  
gcagaacctt ccctgattac agaattcttg gtaagtgcct cccttctgtc ctcagttctc 1560  
aaacaggata ataccacata accttcctaa ctgtccagga atattttgaa aattaataag 1620  
ctcctatctg ggaaagtagt ctaaattctg agaagggaag ggtggagcta agtccattga 1680  
tagttccagt atagaaagtg cataagcaac agagggcttt gtaatcttac atccctgat 1740  
aaaagatact acagtcaatc tcctgtagta gttccacagt tccatagatt acatttttcc 1800  
ttggagcatc ctatatgcag catagttag tggtaagag caaatacttc ctgaatttaa 1860  
atcctggctc tgccaattaa ctatgtgatc ttgggcaaga tatttactca ctttatacct 1920  
aagttcctcg tatatgaaac agaggtgata ataatagttc ctacttcata ggattgttga 1980

gaggattaca tgtaaagtac caggacagtg catggcacat gtaagtattt gctttaataa 2040  
 taattatggt tctgttagtc ctgataatct catgttttat ctacacattt acacctactt 2100  
 ctaaaagcag tggatatatt tctttttgga attgtgtaaa aaaaaataa taattaatac 2160  
 cgttggtttc tctctcatt ttccagaagc agcagttacc actagaactg aattccgaaa 2220  
 ttatgacttc tggcttgtct taacaatcta gaaagggttc aaatatattg atcatattta 2280  
 tttatgaggg aatttccagg agctataatt ttagctagca gttcaaacca aatttataaa 2340  
 taagcaaate ttttactga atattcagtc tgctaacagc ttttgatca ttctccttt 2400  
 gtctcagact taaaaa 2416

<210> 11

<211> 1710

<212> DNA

<213> Homo sapiens

<220>

<223> nbla20226

<400> 11

taatgcttgc tagccagccc tcacttccta ctgtgcagcc cacagaccat taccaggcta 60  
 tgacttgggt actggggacc cctgatttaa acaagagaaa tttattttct cacagttcca 120  
 taggccagaa atccgagatc aagtttctgg tcaatttgggt ttcttgtgag ggctctcctc 180  
 ctggcttgta gacagccacc ttctctctgt gtctcacgt ggcctttctt cagtgcattg 240  
 gtgtggggag agaaagagag agagagagag agagtgcagc aggttcctct tgttataaag 300  
 tgaccaatgc aatttaatta ggactccacc tgtatgagct cagttaatct taattacctc 360  
 ccacagaccc catctcccag tagtcacaca ggggttaggg cttcaatgta tgaatttggg 420  
 gggaacacag ttcagtccat agcacttcat tttatttttt tctacattt aatcacctta 480  
 ttgaattttc tgaatagcag ttatcactgc tggatatatt tcttactcgt gtatttatct 540  
 gtttagtttt cactatcatg atttatctcc ccagagtaga atgcaaactc cattagacca 600  
 ctattgtttc ttgttcatca tgatactccc agagcctaga acagtgccta gcacaaacag 660  
 gacaccagaa aacatttgct tatgaagaga agagcttata ttctgtgaga gcttcaccag 720  
 agcacatttt ctgaacactt cctaataacg tgacttctca tcagtacaag aaaaaccacc 780  
 ccctggtgtt tcagaacagt tgttgagagg gaaaacagaa gtggagtatt tttgtcttca 840  
 gctgttcatg catattctta ctttctctct agatgtctat tactgcatac acagagaata 900  
 aagtgtgcca atctgacttc ctaactctaa ttgcaatcag gttgaaatga tgagtattc 960  
 ttgtcccccg ttcttcagag gaggtacata tggcaggttg atcaatgttt aaatggaaac 1020  
 gtgatctgtt atatagttag cccagcagtg aaactctctt gttagcagat tcatttgtgt 1080  
 gtgtgtgggt cgggtggggg cggattctac cttatatatt tcccatactg tatttatctt 1140  
 ctattataaa atatttctaa aataaaaaata gaacaatatt tctttgattt cttttgcatg 1200  
 attattgata agactggcat tatcaaagaa gaaagcacat cagtgttaac aaggggagaat 1260  
 cggatttaaa ttatggcaaa ttgagaaga aatgtgtaag ttttagtaga aagagttagt 1320  
 aaaaaacata cagaaataca aaaggattga cattattttc accacaataa tggagagtca 1380  
 ggggtgtcca tcttaggacg atggaattgt aattgaaaaa aaacatgtaa acaaaatggg 1440  
 cattagaggt agtgcctta gtgtgctcta tattgggagg tctgaaggag gaatgagaat 1500  
 gaggtttgcg cctcatacaa aatatgagat catagaggga gaatttgagt tatttataaa 1560  
 agttaatttt aatctctgtg ctagatggtg gctctgaaaa atgcagacac attgcttcta 1620

ttctgggttaa actaagatag gtaataactg ttacacttat acatcatgtt tctcattcgt 1680  
cattgttgct tggggaaaaa aaagcaaaaa 1710

<210> 12

<211> 1714

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22182

<400> 12

aattaacagt ataatgttcc accattcttt tcacactgaa tatcagtata actgactgcc 60  
atccatccat tatatttata ctgtttaaaa tgtaacatgt gatagagact tttttaaatg 120  
cagtgatcat agtttttacc catcttcacg aagccaacct tggaagcagg acatggatag 180  
acagttacta tggatctttt tataggggat attatttttt ctagattatg tgtaacaaat 240  
cattccataa atgagttcat acctgttca aaaatagcac aatatttttt ttatgttaga 300  
tttacattat aacagacaaa gtgaagcaaa agattttgga attaagaaaa gtaaattgag 360  
taacagttcc actcaatgcc tatcaaatat tacctttttc atataagatt cagaatcttt 420  
caccacatg tgtccaaata gtgtctttta tttaaaactt taatagactg agttctacaa 480  
aggaaaaaac cttttaatat aaaagtaaaa tttaacctca atttgcttc atcctttaac 540  
aggttcacta ccagtaacag gaattagttt ccctgtagaa acatcttata tataatgact 600  
tatgaaggaa actcactaga aagttataat aacagcatcc catttcttcc aaggactgtg 660  
ttttaatgta aatgttctct gctattatta aataggcccc tatttatgga tcagacaaga 720  
tcattctgta tatttgttct ctttcattat gaaatgtttt tgattgggga ggaggagat 780  
ttacctaatg ctgtgtatat ataattattt ttgaacaaga agaaaacaca caaaaatgat 840  
agtatcattc tagtttgaa gtatcactct ttaaatgaaa acagggtatt tattgtaatg 900  
taaatcatgc tttatgaaa gataatgtac caaacccatg agcagaaatc ccaccaggcc 960  
tcacatggac cttaaactggg agccagaagg ctgttaggaa cccatgagca ttcttttccc 1020  
atttcttgcc gttgattctg tctttgcatg gctgctttt tctttctcgg cagctagctc 1080  
tctcccttgc tctattacc agaccatgtg gcctatggaa aatggcagcc aatggcatcc 1140  
aagttcacct gtcacagttc caccacact gcatatttct gtcttttca gtcccactcc 1200  
caaattccca aagaagagat ttcacttacc cagtttggtc catccaata cagccagaag 1260  
gcaaggccat gtatgtataa atttagtcac caaaaatgca ttctgtggg caactaagaa 1320  
gggaagtggg tattgtgagc ttcgtagaca tcaccaaagg tgtctgctt tgtctggatc 1380  
atcaagaaca aaggatttga agtaccattt tttaaaattt agattttgtg ccggcatgct 1440  
ggctcacacc tgtaatccca gcactttggg aggtgaggt gggcggatca cctgaggtcg 1500  
ggagttcaag accagcctga ccaacatgga gaaacctgt ctctactaaa aatacaaaat 1560  
cagccaggct tgggtgtgca tgcatgtaat cccagctact caggaggctg aggcaggaga 1620  
atctcttgaa cccaggaggt ggaggttggg gtgagctgag atcgctccat tgactccag 1680  
ctgggcaac gagagcaaaa ctacatctca aaaa 1714

<210> 13

<211> 1931

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla23256

&lt;400&gt; 13

cttaaatgtc agcatgtgtt catttttaac aggggtcgat tttctaattcc agccattgt 60  
atttaaagt gaaatagata ttttagata gttcatctt tggcatctt agcaaatgaa 120  
ctagctacag gagtataact tttgatgata ttttgctatc tgaggtttaa gcgtttaatt 180  
agattaaaat tcacccttca aatggagaac tcagaataag taaaatgac agagatgact 240  
ttgtagcttc ccacctctaa taatttattc cactgttggg tatagtaatg atattgggta 300  
gtggtttggg ggcaggagat tactttttac caggttatca tttcagtatg tgttctgaag 360  
ctgatgtctt ctgataccat aatttttaca tataaatgag taaagaagaa atgtaatcag 420  
aactgtgttt gaatgcata ctttttagtt ttgcaaaata gcatggatgt tgtaagagaa 480  
ctggaaattt aggggaagtt ttaggaattc tgaatcctt ctaggtcct ctcagctccc 540  
cattggtttc tctatgtagc caggtaaagc catattttgt gtatgacatc agaaattgct 600  
tgtcattttg aaatttatgt ctacatttgt cttcccagg gctcatatat tttaaaggta 660  
tacattttta ttttagaat caagtattga tttttttgtg aataaattac tataatgatg 720  
ccaattaatt gaaatcatt tctactatta taggatgagt gaaacttaca gatgaattta 780  
aagtttcatt ctagtaattt tttattttaa aaggattaga gattttataa tctgtcctac 840  
agttatcatt ttigaacca atcctttgtg tattaaagaa tattatttaa aattccattt 900  
ttgaaagct catgtcattg ctaaaggttt tgagattcta caggaagacc ttgtagacct 960  
ttttgtcacc ctttcgaaat tgaccagtat tctttcta tgaagctttt accttttaag 1020  
taattttgac aacaatattt gtctggctg ttactataca atattgaata aattatagta 1080  
ggagggtgat ctaagattat ttctttctga aataatgata gcttagaaac ttgttaaaca 1140  
gagccttggg aatgtatggg aacttgaagt atatgcattt ggaaaacatt taatgaactt 1200  
ttttttttaa tgtagatatt aaaaattatt ttttctaaaa ttaatgttat actaaatca 1260  
tagtttgaat tgctgacata ttaattgtgg attaaataat ctatatctta cagactgaat 1320  
catattcatg ttgttgatgt ctttagaac agagaatggg taatgtgtag attaactata 1380  
gagacattac cagtgtacat aaaagctatt aaaaatctta atattgtaat ttagcactgt 1440  
attccctcta cctagtatt tttcctcttc agctttcagc cattttctgt atactttagt 1500  
ttttagtttt tggcatcccc tctggtttga aacctatctc tctaccttc taacattttc 1560  
tatttagttt aaatatgtct ttatgcagtt atacaataac tctttgccct tgaggactga 1620  
atggtttcct ttcctataga agagttgttt tcaagctttt tttctctgt ctccacattc 1680  
atataagcag tctgctctga tcagtagaat ttctcggata gaggtgatca cttgaagaat 1740  
gaggaggagg ggggtgtagt tttaataaaa actctctaga gggtctgtg tccccccac 1800  
tgagaatcac acttgagagc ccaccttcc tataagattt atatctgacc tccttgacc 1860  
gtcactctgc taaacagaaa cgttctttca tgttttgaat gtgggaagga caagcaactt 1920  
gtagacaaaa a 1931

&lt;210&gt; 14

&lt;211&gt; 2064

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla21297

&lt;400&gt; 14

acattgatgg aaatgtatgg aaagcataca gttggaccga gaaactaatt ctacagagaaa 60  
ataacttgac tgaattacac aaggattcat ttgaaggcct gctatccctc cagtatttag 120  
atttatcctg caataaaata cagtctattg aaagacatac atttgaacca ctaccatttt 180  
tgaagtttat aaatcttagt tgcaatgtaa ttacagaact cagctttgga acatttcagg 240  
cctggcacgg aatgcagttt ttacataagt taattctcaa tcacaatcct ctgacaactg 300  
ttgaagatcc gtatctcttt aaattgccag cattaaaata tctagacatg ggaacaacgc 360  
tagtcccact tacaacactt aagaacattc tcatgatgac tgttgaactg gaaaaactct 420  
gaagaagcat cggtagggaa tccagaagga gcgttcata aggtgttaca agcccggag 480  
aactacacaa gcactgagct gattgttgag ccagaggagc cctcagacag cagtggcatc 540  
aacttgtcag gctttgggag tgagcagcta gacaccaatg acgagagtga ttttatcagt 600  
acactaagtt acatcttgcc ttatttctca gcggtaaacc tagatgtgaa atcactgtta 660  
ctaccgttaa ttaaactgcc aaccacaggt gagagacaga tggaaagact taaccacgc 720  
tatttccatt ttagaaagt caaaggctag agttacaaat acgaagacgt ctaaaccaat 780  
cgtacatgcc agaaaaaaat accgctttca caaaactcgc tcccacgtga cccacagaac 840  
acccaaagtc aaaaagagtc caaaggtcag aaagaaaagt tatctgagta gactgatgct 900  
cgaaacagg cttcattct ctgcagcgaa gagcctcata aattccctt cacaaggggc 960  
ttttcatcc ttaggagacc tgagtcctca agaaaaccct tttctggaag tatctgctcc 1020  
ttcagaacat tttatagaaa agaataatac aaacacaca actgcaagaa atgccttga 1080  
agaaaatgat tttatggaaa acactaacat gccagaagga accatctctg aaacacaaa 1140  
ctacaatcat cctcctgagg cagattccgc tgggactgca ttcaacttag ggccaactgt 1200  
taaacaaact gagacaaaat gggaatacaa caacgtgggc actgacctgt ccccgagcc 1260  
caaaagcttc aattacccat tgctctcgtc ccaggtgat cagtttgaaa ttcagctaac 1320  
ccagcagcta cagtccctta tcccaacaa caatgtgaga aggtcattg ctcatgttat 1380  
ccggaccttg aagatggact gctctggggc ccatgtgcaa gtgacctgtg ccaagctcat 1440  
ctccaggaca ggccacctga tgaagcttct cagtgggcag caggaagtaa aggcattcca 1500  
gatagaatgg gatacggacc aatggaagat tgagaactac attaatgaga gcacagaagc 1560  
ccagagtga cagaaagaga agtcgcttga gctcaaaaaa gaagttccag gatattggcta 1620  
tactgacaaa ctcatcttgg cattaattgt tacttggaata ctaacgatti tgattatact 1680  
tttctgcctc attgtgatat gttgtcaccg aaggtcatta caagaagatg aagaaggatt 1740  
ctcaaggggc attttcagat ttctgccacg gaggggatgc tcttcgcgaa gggagagtca 1800  
ggatggactt tctcatttg gacagccgct ctggtttaaa gatatgtaca aacctctcag 1860  
tgccacaaga ataaataatc atgcatggaa gctgcacaag aagtcattcta atgaggacaa 1920  
gatcctcaac agggacctg gggacagcga agccccaacg gaggaggagg agagtgaagc 1980  
cctgccatag gaggagaaca cagcccacct caggcctcct gcaaaaatac atagaataaa 2040  
caacaacagt tactaaatga aaaa 2064

&lt;210&gt; 15

&lt;211&gt; 1650

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens



&lt;220&gt;

&lt;223&gt; nb1a20787

&lt;400&gt; 15

atttactaag agtaattggg tttaggatgt tggaaatitt tagcttgggg gaaaaaacat 60  
tcttatgaag gagatagggt ctcttcigag tttgtcataa tatagattgg tgtctttgga 120  
aaatggccac aattttaaga attcaattat gcatataaaa tgataattat tggaattcca 180  
cagtaacaga tttaaacagt cttaaattgt ttatctcctt tactgtaatg tattgaaatt 240  
tttagagaaa ttttagttgt taacatttta ttaagtgccca gtgtcagaat ataacaaatt 300  
atagtttctt atgaatgaca ggcctacagt tattattctg gattatttga tggaggacaa 360  
acttacctgt atttgttagt caagctgtga aaataaggtg gattacaaaa gatgtgaaaa 420  
aaattttagt ctgtagactc agtaattttc tataattttac tgtaaatctc atttgaacat 480  
ggattaggta caatttataa attaatcaa gtcagggtct ttaggtatca ggtgccagag 540  
agatatttaa cagatttccc tacctaaatt tatgtatatg tactgtctaa aacaatactt 600  
ttttaaaaaa aaggaacagt tgggagaaaa taaatataat gaaaaattcc cagaggctag 660  
cacttggatt ctaacacgta tgctattgta ttatccatta gttctgtaat atttaatttt 720  
agattctttt atttttttta ttggcaaagc acaagggtgt gtataacagt gtcattttaga 780  
gttttataga aagcttcaac ctgagttctg cgttataaag cctggagaaa gctaagctta 840  
gaacataact tgctgaagta taattatctt tttgtagcag gaatttatgt gccagagggtg 900  
agagtctttc tggtagctgat tttttgagac caaggataaa aggatcgttt tgtaagacat 960  
gccatggcaa tggctgggtg ggggacagtt tccgccaag cttggcctat tttatttttc 1020  
ctcatacctt ctttcaaagt catttaggta tttgaagcct tatttccac gtagtaacac 1080  
tttctggctt ttgcagtttc tttttttgtt tgggtttgtt ttttgcattg aatggggatc 1140  
aaacaacccg aagaagaaca cattttgatc aagcaaatg ttigtctcaa atttcagaag 1200  
tttattttac agaaattaaa ttaagtagtt tgacatcctt ttctctgttt cacacatata 1260  
ttaggttgggt gcataagtaa ttgtggtttt tgccatgact tttatggcaa aacctgcaat 1320  
tacttttgca ccaacttaat acatctatat acatatatat atacgcgcac acacttggtc 1380  
agaagttatg ttgtggcctt ggattttgtt tttcccttgg aaatggttct taactctggg 1440  
attttagaag gttagaatat ttttcaaga gaacagtggg actcaaaaga atgaaagggtg 1500  
gtccctacat tttctgtatt catcacttaa aatttttaat ttttccgaga actacaagta 1560  
acatttgaac catgtgctgt ttgtacccta aacaaaaact cagtataac cagtatttag 1620  
tctattaaaa atgctctttt tgaagaaaaa 1650

&lt;210&gt; 16

&lt;211&gt; 3050

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nb1a22284

&lt;400&gt; 16

gatgcggaag aaagagatgc tcggaaagtt ctaataaaat ggaaagatag catccctagc 60  
atttttttct tgcttataga gatattccat gggatagcaa atcctgtgtc atggagatga 120

agtcaaaatt cctgattcca aaaggttttg agaaaacaaa gagggggaat gacgtaagaa 180  
agataggcat gagcatgttg taactagggt agcacgtgtg cttcccagcc caggagcgac 240  
caaatcctgt ggtggcgtca ggtgtgcagt ggagaggaat atagaggctg tatggcctcc 300  
ctcagtgagg gcagggaag agggatcact ctgagagaac aaaaataggc cccaagttgc 360  
taagcagtga ttgggaacct tcctttcctt ggccggagatg catgacattc cctaccgatc 420  
cccagacaca gcctgtggga ctcttaggag aaatggtgat ttactgaata actgaccctg 480  
tgccgagatg agtacaatga agtggagggt atgaactcaa atcgtcttcc agggccaggc 540  
ggctgaccgg ggtgagcgta gtggcccgct ggggaccatg gccgccctga cagccacacc 600  
cacctggagc tgacttggtt ctggctgttg ctgccactgt gaaatctgta tctctctcca 660  
tctctgtct actatccccg gccttgccag acagtgttct ttttcggaag aagtctagat 720  
ttttgcatga aaaaactcaa tctttaaagg tcgactcaga acattttaag gaggcctcca 780  
cttggcttga tgcagtcttg ctaattaaga actaaaggcc ttctgacctt cttggtgctc 840  
atgctgtacg gcacttgaat gtctcgaccg agtccgagcc gtgcagctgt cctccacctg 900  
cgaaagtaat gagaatccta tcacgggaca taaggatagg tctaaacagg gtccatgcc 960  
agaaaacagt ggggtgctct cccaggcctc tcccctgtcc actaacctg gccttgccgg 1020  
ctgccttcca ggctctgggg gaagagctcc tgcattcttc cctggccacc ttggctccag 1080  
ggctccccag agagcctctt ccctcccaa gtacctgaga aagatgagag aggcacgtgc 1140  
tctgtggga aggtccagtg agcggttcaa gggcctggaa tctccctacg gccaaagtcta 1200  
agggttctgg gattctgggc tttgtgggt ttgcttgctt gctgggaatg ggctttccct 1260  
gtcccgccct gccccacctc gcctctgtct ctccagaagct ccagaacca gcagtacct 1320  
gcaaaatgtg gcctctgatg ggggcttagg gtgggagatg gggagagcct acattgtctt 1380  
ttgctccttg aaaacttta tagctcctat tttccagaga atggtgcttt gtgagcaaca 1440  
tgcgagtaag agagaaatag gaggaagggg gtagggggc ggatgggaga agagtggctc 1500  
gtttttacct ctactgcct tgacattttg tgaacgtgaa gcttaaaact tctgggctta 1560  
caagaccag gggcacgtca gctccttaga tgggctcagc ctgacacata attcttaaac 1620  
ctttcctgtt taagaaactt cttagaggctg tgtactctca ccaatcctct tcgagaattt 1680  
gttcatgtgt atttccccat tataatggat aggtcagga taacagcata gtggctacct 1740  
tctactgagt tttgagggtc taataagtat gtttgtctga ggctgcacat gtgggtggct 1800  
ctgtgtgtat gatccaaggg acaaatgac gatgtaggaa ccagcaagaa cggaatctgg 1860  
gctgatgctt cagtctccac ctgggtgatg gctagcctcc cgccctccac caccgcatcc 1920  
cacacgtgct gcgcactgtc cccgtgtctc ctggagaacc aaactggaga aaacctttct 1980  
gagtatctct catagtacct ctctttaag aagatgtggt ttagagcatg tgtgcaatcc 2040  
tgctctgta attaggaaac ggagcccgag gctttccatt gttggttgaa cccaggacag 2100  
ctggtgctat tcacaggctg aagaactggg cagttcttac ttgggtctgt cctaggatgt 2160  
ggaggaagtt caggactaac gctaggcaga gtagtgaact cggtttacc agcctagggg 2220  
cctctggatg ggaacactcc attccaagat ctgagcagag cagggttcc tggcttgagg 2280  
ctggaagcct ttgggaagag gccagctgg gacattccct gggcacctgt cttccgctga 2340  
aggagcaag gtgccctctg ggactgacag ccatgacct ctgtgccatc ctcaatcctt 2400  
gagccatata tcaagagtcc tctagagccg gatggtcctc aaaagtctgt ccaaggaatg 2460  
ccaacgttca cgggctctg agaaacgacg caaatctctg agctggggac cacttgga 2520  
accggcttag taacagtcct gatcttcgca agccagcttc ttctgcatct gaggggctcc 2580  
tggcggccag aggaggcaga cagatgtctt ctgctgagt ttctaaccgc atgatgagac 2640  
tcagaccttc cgctgcacta gaaaatctgc aacagtgtcc ctgagtcact tctccttagt 2700  
gggcagactc gtgttagatt tgtggaacc agctctctga tttactcctt ttggaacc 2760  
catggaattt catgtataag gctttcattt gtattttaag gttttctgt ttgtttgag 2820  
tatatacatg gtgctcaata gcaacatctt agcagatgaa gcagtttatg attccactcc 2880

ctctgtatg acaggtagcc actatactga atcaaggtgc tgaactcaaa tcacaaaatt 2940  
 ctggcttacc gatacaacaa ccaatacatc tttgttctgt aatgtaaaat ttgactcctt 3000  
 actttataa cttattaaag ttaaaatgtc tgtgtttttg caatcaaaaa 3050

<210> 17

<211> 1733

<212> DNA

<213> Homo sapiens

<220>

<223> nbla20123

<400> 17

gatacactga accccacgcc tccaacgcaa ggtgaaaggc atcacaaaat aggcaactgag 60  
 tctgccctt ggaigaagtt agcatttttt ggcccagga gcatctgctc tggcaactgaa 120  
 acagcaatac cgacacggag acgagagcca tgcaaaaaca ctgagtttcc gagccccagc 180  
 caggacagtg cgagttagta tctgtctttt ctttgtggtt agaatacaagt gtcacttaaa 240  
 aataaccggt tggtaggaag aagtcactgc atagtacaat gccagaagac ccgggggatca 300  
 gagagtcctc cgataactga tgctgctcgg ggctcacgtt tgtttggaag actaaatctg 360  
 cctccatttt ctgtgccgga aaaatcatcg ctctctgcca ccacagaagc cttacctttt 420  
 gcagaagctg ggaaccggag tacttagcag caatggattt tatctcccca ccaaaagccg 480  
 aggcccagag ctccacccta caggagagaag gggcacagga agatatgtaa caccctgtgc 540  
 acagtcaaca cgcacgcaca cgcacacgca cacatgggac tatggctgaa ggagcagtgc 600  
 gatgtaacat gttttaaaag aagaaaagat agaaaaagcg gcttggtaga aactgccagc 660  
 accaaaactg caaagcgcag cgcgggaggg ggcccagagg gggctcgcga gttagaatg 720  
 cgcaaagtct cccaggctct ctaaaaagac cactgagttt cattcgaacc actgcccgag 780  
 gactcgaccc cccaaactgg gcatcacctg gcaaatagca gtcagaagaa atccacccat 840  
 cccccccca aaaaaagaag tggggcggca gtagagcaaa gaggggggaa attcagcggc 900  
 ccatggaagt tggattcggg aaccaggctc caaagttggt gccgtcactt gagtagagac 960  
 ggggtttcac cgcgttagcc aggatggtct ccatctcctg atcttgtgat ccgcccgcct 1020  
 cggcctccca aagtgtgga attacaggtt gccctgaatc tcaagtccag aaatccacta 1080  
 gaggacctgt tacggtggag agaagatcag tctccattaa ggttggcgat tgatcaggac 1140  
 tatttatcaa gaaaatcaaa gacaaagaca gatcctagga ggttctcatt taaccaaagt 1200  
 gatagaaatc agatcactgt tgaacatcta gttggaactg actttgccgc tctactcaaa 1260  
 tggagaaggc ttccttcttc caacagactg tgtggcagca tgaattatgg gcagggatct 1320  
 gtgactgctc aacttttctc tggaggccct gtcaggggtt tcagctgtcc tttcctcag 1380  
 tgtcacatct tccacaaagc cattcacctt ttaaggattc actgagcact catcctgtgt 1440  
 cagggtgctga gctgagcacc tgggatttgg aggacaggaa gacacagtcc cacaatcaga 1500  
 agagaagcct ttccctagcc ttctctcaga gactccccc agaateccctt agcctatgat 1560  
 ctgcatctcc tgggcaacct tctttccac ctctttttac ctttgtcttc tacttccagt 1620  
 cctcttacca ccaggccatc tgtcccttga gggctgcctc agaatectcc acagcatgta 1680  
 acagaatgag tggcacacag cagaagctca ataaatattt atggaatgaa aaa 1733

<210> 18

<211> 1498  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nbla20382

<400> 18  
atttcaaaat tggtaacacct gcagtactgg agcttcaaag acaatgtctc cactgtcaat 60  
gattaaacac ttgtgcaagg gagtcagata tgcctgggtg tgataatacc atgggtgggtt 120  
cagtgcagtc aggatgggtgt gaatgaagaa cttctagaac actaaggaat atgtaaaata 180  
tacccttctt ctgaggaagt agagttgaca tttagagcttg aaggaccaat tggaataagg 240  
tttccgaaat atgttatgat ggggtgggagt gtggaattgc aagcaaagca aagagtgtga 300  
ccaaactggc aacgttggaa actgatcata gactgtttga ggaatggcag gtcccctgat 360  
aaaagcagtg ccaggagaga gttgctaagc ctggaaagag ccttgcaaga gtattcaaag 420  
aataagggct ttgtttcaca ggcagtgagg aactgtcgtc atccttaagc tggacagtga 480  
tgtgttcaga ctgctgggtc tattcttcct ccgttctttc cttcctttct tccctcttga 540  
tgatttccat gctttgtgga ggttgtgtta gaggtaaaat aaaaaataca taaagcgttg 600  
cactgtcatt ctctgctagt ggagatgcaa actgacacag ctcttctgga ggaaaaatag 660  
gtgatacata acaagaccaa cttttaactc aggatcttac tttcagtaat ttatgcaaaa 720  
gatctacctg caagaatatg aaaagacaag tggataagat tatttactgt agtattcttg 780  
gtaatagcaa aatattagat gttttgctat tacctaaata ttcacaccta agagaatggg 840  
tgaataaatg atagtgcagc tacacagtgg agtacaatgc aactgtaaaa tagagtgagg 900  
aaagttactg tgaattgatt gctattgaat aatgtccagg atatgctgta aagtggaaag 960  
gcaaagtga gaagggttac tctgagatat tccttactta ataaaaataa aaggatatat 1020  
gaaaaataag catgcacctg ctaatttgta caagagaaat actggaaaga taaatcagaa 1080  
accagtgaat taaattacct ataggaagtg gatgaggaag gagtagaagg aagaggaccg 1140  
aggtagtaga gatgaggaag aacagcactt ctcttatgcc ttagtttagc ttggccttta 1200  
ggaagtagag tagactgggc atggtggctc acgcctgtaa tcccagcatt ttgagaagcc 1260  
aaggtgggca catcacctga ggtcaggagt tcaagaccag cctggccaac atggcaaaaac 1320  
gccatctcta ctaaaaatac aaaaattagc tggttgtggt ggcacgtgcc ttagtttcca 1380  
gctacttgga ggctgaggta ggagaatcac ttgaaccgg gaggtggagg ttgcagtgag 1440  
ctgagattgt gccactgcac tccagcctgg gcaacagaga gagactccca ctcaaaaa 1498

<210> 19  
<211> 2256  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nbla20660

<400> 19  
ttaaaacttg tccgggcatg gtggtagctc aggagttcaa ggctacagtg aactatgatt 60  
gtgccactgc accccagctt gggtagacaga cagagtgaga ccctgtctct aagaaataaa 120

taaaaataaa aaataagagg agcttttggga attcagcttc ttggaaggct gaggtgggag 180  
gatcacttga gcctgggcat ggaggttgta gtgagccatg atcacgccac tgcactccag 240  
cctgaatgac agagttagac cctgtttcca aaaaaaaaaa aatgtgtgtg tgtgtgtgtt 300  
gtgtgtatat atataatata tatatatata tacacacaca cacaacacag acacaatttg 360  
tgtgtagcta ggggcagata ttgagatatt gaagtataa gtaactgggg atggggaagt 420  
actggtcact taagagcata tagaaaaccg tcccagattg tcttttctaa tctatttttg 480  
gaggaggttt ttatatatcc catgttttat attatttctc ccaaaccgga ttagatatag 540  
tgaacaataa aataaatgca gtttccaaaa ccttggtgtt cagaaatgaa gggaaccatg 600  
aggggagtga aggggacttg cccttggctc tgtgtgtat gactgcccc gggaacagcc 660  
ccaggacact tctatagttt ctttctgaga ctcacaaggt gttagcaatg ctctgagctc 720  
actcaattga cagatacgtt taaggttctc aaataaattt caaacttcta aatttttcct 780  
tttcattgtg tgcataatgt acagattagg aaaatgatct tctaattgag aagtatactt 840  
caaagtttgg aaataaaatc ataaaaatgt tticctaaac atagcctttt tcaggagttt 900  
ttgtggatat ggtcaaaggc aatagctcta attatctggg gtcctcagga caggaaatga 960  
gtcacactc atgtctcaa actgtgtcac agcatttttg gaaatatttt catttctatt 1020  
caagaggagg aacaaggccc caagtgttca ccctaattgt tgaaaataaa cataaacatg 1080  
aaaitcacia aagaacaact ataaatggct gcaaatatgt gaaactatgt ttaacttccc 1140  
agggagtcaa aaaatactaa ttaatacaag aatcatcttt ggcccaccac attatgattt 1200  
tgtctgaata agcctcttca atgtctgcaa atatgaggta aaatggctgc tccggtgct 1260  
ctttttggct ggtcttaagg ggcgcaaata gtcaccccc atttggaag cacttgcaa 1320  
tggctgctaa gacttttagt ttttcatag cttctaacct gctaagaagt agatacttgt 1380  
tcccattttg ctgctgtgca aacagacttg tagaggtaaa gtatctcgta caaggttaca 1440  
ttgatggtga ttgatggcgc caagatttga acttggttgt gagtccaaag tctaggtctc 1500  
ccattctacc catgtgattt tacacacatg cctgatataa ttagctcctc ctcctctcca 1560  
gagaagggca gctgacctt gtttcccagt tcagaaatcc tgggtgtagt tatcagctgg 1620  
ggttgagggt ggatagattt gttccaactt tacacattgg acctgagaat gtactttcct 1680  
gaataaacag ttgtagaagc gactgacagt tgtggttgaa gttgttcccc cagtgcagt 1740  
ccccagagg gtaaatgacc ttctgtgggc tgtcccagga acttcatccg aggaaaagg 1800  
gcttacctgc taacatttga cctgtttgga aattggggat tgtttttcct cattgaaatt 1860  
ggtgagggtt ggaagaatac gcaaacgaat gtttgggtgt gaagaacgct ggaggagtaa 1920  
acttactata ctcacaattt ggattacaac atagtttggg taaccagct ctggtgaacc 1980  
aaatgtacaa gtattatttc cttatggttc atcttataaa atattttata aattggttgc 2040  
tttctttaag ctctccacaa atgaaaaatc agtccccaaa atctataaaa gactatttca 2100  
gcgttaattg accattaagg aaatacatac taggctgcat gtggtagctc acgcctgtaa 2160  
tccccacact ttgggaggct gaggcagaca gatagcctga gctcaggagt tcgagaccag 2220  
cctgggtaac ttggcaaac cctgtctcta caaaaa 2256

<210> 20

<211> 1411

<212> DNA

<213> Homo sapiens

<220>

<223> nbla20666

&lt;400&gt; 20

```

ttaaaaatta gccaggcatg gtgactgggtg tctatagccc cacctgctca ggaggctgag 60
gtgggaggac cacttgagcc caggagtgtg aggatgcagt gaatgccatg atcacacat 120
acactccagc ctgggtgaca gagtaaggcc ctgttaaaaa aaaaaaaaaa agtcctcctt 180
aaagacatgg gctttctaga cagggttctt ctgctgaagc ggctttcctt ctgccagaat 240
ctcaggaact cctggatctg cttttccaga accagcttct ctctccctgc tctgccttca 300
gactgccctc ttctacctc tccctctaga actacatctc ttctggctgg gtttatagct 360
tggggctggg ggaggccag tgggactggc tgagtggagc cagccgtgtg acggaggcgg 420
ccctcttcca gttgggcact gccaccctct cgtggtccaa gcagcacatg agcagaacca 480
ggtgctcaac accaagacc ggtacctgca tgacaacatc gtggactatg cgagaggct 540
gtcagagacc ctgccggagc agctctgtgt gttctatttc ctgaattctg ggtaagtggg 600
ctgtggccag ccccgaggaa gagggtgaga cggtaacaaa gacagtcact cacatgggcc 660
cagtgtagt tagctgactg agtgtggact cggagaggca gcccactg caccaggctc 720
ctgagattcc cggctgtagg ccctgatgct ttctctgtt gatccagttt ccttgtctct 780
tattgaagga tgattattacc tctttctag gatcattgct ggagcttagt gagtaatat 840
gttctttat ttctgcctta cggatacagc caaatccct gcctgtgggt tgctcagtaa 900
ggaaggaaaa catcaagtga ttcttcaaag aaatacagaa ttgcaaggag ggctctggag 960
gaagtgtaca gggatcatg aggcctagaa aaagtgaggg gacctgacct gggggttcag 1020
ggaaccttc cctgaggaag ggctgttaag ctgagagctg actaggagat aactagaaga 1080
ggaggaagga aggtgctgc cactgcatca gaagtctcgt caaggctggg cacgatggct 1140
catgcctgta atcccagcac ttcgggagat cgagggtggc ggatcacctg aggtcgggag 1200
tttgagacca gcccggccaa caggcgaaa cccgctctct actaaaaata cacaaaattt 1260
agctgggcgt ggtggtgggt gcctgtaatc ccaactactc aggaggctgg ggcaggagaa 1320
tcgcttgaac cgggaggcgg aggttgagc gagccaaaat tgcaccactg cactgcagtc 1380
tgcaggacag agagaggctc tatctcaaaa a 1411

```

&lt;210&gt; 21

&lt;211&gt; 1346

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla21239

&lt;400&gt; 21

```

attactacat tataaataaa ttcacagttg tataataaat tgctaactgt ctgtcataac 60
tgatagactt tcagccccac cagggtgga aaaagtctgt cttctccact aagctatgtg 120
tcttgcaagt atcagactgt cagcaaattg tgaataaat aagtgaatta aataatgcat 180
ttgatagtct agcaatagat ctggctactc agcagcgtct ctgacagcat ccactttaga 240
aataggcata tgtttttccc actttcgcac tgtgtatcac tgtgatgcag gtccttaaag 300
caattgacca gctaggtctc attcagaaaa gacagtcct gtcaggcgcc cagcctatgt 360
ctgtatcagg tctactact tggatattg tctgtcctga gaagcagcat catttggctc 420
atgcttatga cctctgccc gaatctcttg aaaaggagac cacaggaagc aggcacatg 480
aaggagtctt cagaagaggc agtgaccag gaaggcacct tgtctggacc ccctgccggg 540
tattcaaat ttgctatata ttagaatcac ttgtcaaac ccagtgaggc agatgaatcc 600

```

caataagttt taaatcagaa tttttggaag tcagacgcag acatcaatat tttctaggat 660  
tgccagggtga ttccagcatg tagccaagtt acagatgccca cactctagga tttgtgact 720  
agtgtccag gaccaggac attggcatct gctgggagtg ttttaggagg gcaaaatcat 780  
agctctgtcc cagatctatg aaatcagaat ttgcatcata aagcaaatcc cttgtgtaga 840  
gttgtctgag ctctttatac attctgataa tcaatcctca ttgattgctg tgcatgttga 900  
gggtgtgagaa gcactgccct agcacagaga gcagtatcac accattaact tactcctggc 960  
cattttcttt ctcttttgtc ctctctctct ccacctgtct cttcactcta tataccagcc 1020  
atctagaact ccaattacct gaaatgcaac ctctttcttt cttagttaaag tgctgttagt 1080  
attacaaaac ctttaaacat ttagaaagtt caggggaaaa tgtgatgaaa ccctatgtat 1140  
gcaccattaa tatgtaaaca aaataaactt actatcattg agtcttttct tatttaaaaa 1200  
aaaaatgcta caaggccagg cccggtatct catgcctgta atcctagcac tttgggaggc 1260  
caagcggaga ggatcacttg aggccaggag tttgagacca gcctggccaa catggtgaaa 1320  
tccigtctct aataaaaaata caaaaa 1346

<210> 22

<211> 2798

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a21729

<400> 22

caaaagatgc tgttttacat aaggctactc aataccctga taaattactg gtctactaag 60  
gtgaatctgt atctgaattt tattttcaaa gaggatgaaa agattgtttt aatacatact 120  
gttttgacat ttctaccaat ctgtgtgtct caaagagatt tgtgtgtttt tgttgaatat 180  
ggttttacct agtatttcct gacttcataa ttttattttg taattaagca atataagact 240  
ataaataaga gtgcttagag aaaacaaaga ctagtacagc ctaaaattct aaattgggta 300  
tataatttta agtattatc gaaccagaga aaagaagcac aagtgaata gagcttaacc 360  
tcatcagagt cacttgatcc atggaaacca aggggtagaa atttccctc cctgggcctt 420  
tctgaggtat cctggtcatt gattcttatt aaacccttgg gagtttagta tttaaaattc 480  
caaagcccat tctggcaaaa gtaatttcaa gaactaccta tttaatggga aagccaattg 540  
aataataaag gccatgaatt ataatatatt tagaatatat tcagggttcc tcccacgact 600  
ccccccgccc cccgagtata ttatagtgtc aaaaagcatg gctaatggga agtgctgcta 660  
aaaagaggtc ctgccagacc tgctttatct aatcctgagg aattaattca gaacttaata 720  
ggttttgcag ttgtggtttg tttttaaaat atcaataatt ctgagtagat tcaaggcttt 780  
ttttttgttt tgtttgttt tgtttgttt ttgagacgga gtctcactct gttgctaggc 840  
tagagtgcag tggcatgatc tcggtcact gtaacctccg tctcctgggt tcaagcaatt 900  
ctcctgcctc agccccctga gtagctagga ttacagggtg gcgtaccat gccagctaa 960  
ttttagtatt tttagtagag acaggatttt accatgttgg ccaagatggg ctgatctct 1020  
taaccttctg atccaccac ctcgccctcc caaagtgtg ggattacagg catgagccac 1080  
cacaccggc ctcaattttt ttttttttt ttttttttt tttactaact tagtcttctc 1140  
ctctcctctg tctaccctta gcaatatata ggtaaacata tccagcttgt ctaacacatc 1200  
acagattatt agttaacaag gtgtagatta atgagcttat attgtattgc tggatctttt 1260  
gagttaataa caatggtaac ttgtccagaa ggcctatcat cattcctagt aggtgggcac 1320

agagtaagag atattaagaa gcttcctgat gagtcatcat ctagcgaagg cctgtgtag 1380  
 ggcttttatta taggagttac attgacttct ggggcattca aaggtctccc ctcttatcca 1440  
 tatctctgtc attttgcttc tccagccacg acaacacact ttcctctcca actgctccct 1500  
 cccacacaaa aaagaagacc ctctaaaagg caaaggaata aatattctta gaagtaaatt 1560  
 atcttcatcc catgctgcct ttttcaaaga ggtgttagga tatttatect atttctgtat 1620  
 ttcacagtag cttttcagge tgtcctgctt atatataagc tgatttatat tgagaaaaat 1680  
 cacttttgaa taaagaggat gaaatgactt tacaccccat taaatactca gtcaagctta 1740  
 gccatgactc agtaactaaa aagttcaaaa aatccagtta tgtaatgtgc agagtaacaa 1800  
 attgcaagaa aaacaactta atcttccagt gactaagtaa gaaaaactgt tgtcactatt 1860  
 aaacatgtag gaaattgata attattacaa acaagcaat actctaccct aaatctagac 1920  
 aaatcactgg acagatgata agattttcag ctttctcctt taaagagctg tgccaatgta 1980  
 cagatttttt tgtaaacatg caaagggaag gttacaaaact ccttaaaactt taaaaaacca 2040  
 taaatccttt ctttgctact tatattctat gccaatata atattccaag acttaccttt 2100  
 cttcagaatg cttacatatg gaaaggttta tttataaata tttgataggt aaatattcca 2160  
 tatgtatttt ctagcccgctc tttctctgtc cctccctcaa ataacttcat taccctctcc 2220  
 tttttaaacg aaatatcttg ataataagaa aacaaaatca ttttttgtg aaataatata 2280  
 tatggacaaa aaatacaagt tgtattttac ttctgggtca ttaaaatatt gtgttaggt 2340  
 ggattttttc ctcttttatt ttcagaaaca taaaagaaat tgttttattt cctaaaggat 2400  
 aaaattggat atagcctctt tagtagacac tatcacagt ctgttggttg ctgtgttcat 2460  
 ttgcttaatg aattgcgtga gaacagtcac tgtaatgaaa tatgtgtgct ggggggtggg 2520  
 ggaagggcat gggaaatgtt ttatgaaaaa aggttataag cctaatacta tgaagtaaca 2580  
 tctaatagcag ttctttttta gtgcaatata tttatttctg ctagaaatat attatcaacc 2640  
 ttatgtaata ttgaagcat tacatattat ttgtaaacag cttaaaatta tatattacc 2700  
 caattgtaca taagtacaaa tgtgtggata ttagtttctt tcattaaaag tgggtgtttt 2760  
 ttaaaaatac atttgcaccc atttacacct ttcaaaaa 2798

<210> 23

<211> 3322

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21831

<400> 23

ctcattttct cttgctgccg ccatgattct gaggcctccc cagccatgtg gaactcttgt 60  
 gttgtgtttt taatgggaga gttggtcagc gtctgctgga acagagctac gcctatggaa 120  
 ccgtagactt gttcgtgctt tattgcaata ctttaaagac acaaagtctc aacaaccatc 180  
 ttccgcttga cgagacagat cattctaatt tgagcagaag ctactatgtc ctgccctttg 240  
 aacgcggcgg cccggacagc tgacaaggac acactgtgta tttccattcc aattctggga 300  
 gtgctctgag gcctctgggg gagaaggacc catgaaatat tcaaaacata agtgaataaa 360  
 atatctaggt gctagatatg ggccaggaag agccctcggc cctgcaaagt gtgtgtgatg 420  
 gtgagaagct accggaagag atggtccctg tgcttggttc attccttga catttatcaa 480  
 gctgacgaat gtagcagagg tgcttcagtc ggctgtaatt ccacgggttg agtgctggct 540  
 ggagagttac ctggggctgt cactgcat gggctccggg acactgtggc tgcccttatg 600



tggtgtcccc ggagggccct gcaggtgtca caccgtgtct ccacactgcc acctgtgttc 660  
agcatctgtg caacgtatcc aggtctctgg gggctagaat gaaaaacatg catctcgtaa 720  
ccaatgaaat cgggcttgtc ctgaagacct cgtgcattca tccattctca cactgtata 780  
aagacatacc taagactggg cacttcgtga agaaggagg titaattggc tcacggttct 840  
gcgggcttta caggaagcat ggcagcttcc acttctaggg aggcctcagg aaacttatag 900  
tcatggtgga aggtgaaggc gggacaaggc gtctcacatg ggagcagtag agagagaaaa 960  
agaggggttg ccgcacactt tgaacaacc agatctaacg ataactcact atcatgagaa 1020  
cagcaccaag aagctggcgc taaccactt gtgaaggacc accaccatga tccaatccct 1080  
tcccaccagg tcccacttcc aacgttgggg attacacttc acggtcacat ggagatggca 1140  
gagcacctgc acgtgcacct ggagaccctc tcaagcctcg tctcctggca ctgcctcctc 1200  
ctgacattgg aggctgtgg gactaccagc ctgtaacctt cgttgtgatg gcacctgcct 1260  
ggtgtctataa ttcagacatt tgtctcccca acctcatgtt gaaattigaa cccaatgtt 1320  
ggaggtggga cctgacagaa ggtgcctagg acatgagagc ttggtgtgtt cctcgcggtc 1380  
atgaatgcat tcatgttita ttccttctca caagaactga ttgttaaaaa cgcttggcac 1440  
ctcctctgcc cactctctct tctcctctct ctcaccatat ggtctgcatg cacctgtctc 1500  
catcgcctta gcatcgagtc ggccttgttg acctactgga ataattaggt ctaagtggag 1560  
ttttaagggt actgatgact tacaataat gggctctgat tgggcaatac tcatttgagt 1620  
tccttccatt tgacctaat taactggtga aatttaaagt gaaticatgg gctcatcttt 1680  
aaagctttta ctaaaagatt ttcagctgaa tggaaactcat tagctgtgtg catataaaaa 1740  
gatcacatca ggtggatgga gagacatttg atcccttgtt tgcttaataa attataaaat 1800  
gatggcttgg aaaagcaggc tagtctaacc atggtgctat tattaggctt gcttgttaca 1860  
cacacaggtc taagcctagt atgtcaataa agcaaatact tactgttttg tttctattaa 1920  
tgattcccaa accttgttgc aagtttttgc attggcatct ttggatttca gtcttgatgt 1980  
ttgttctatc agacttaacc tttatttcc tgtccttcc tgaattgct gattgttctg 2040  
ctcctctac agatatttat atcaattcct acagcttcc cctgccatcc ctgaactctt 2100  
tctagccctt ttagattttg gcactgtgaa acccctgtg gaaacctgag tgacctccc 2160  
tccccacaa gagtcacag acctttctc tttcacgaac ttgatcctgt tagcagggtg 2220  
taataccatg ggtgtgtgta cactaacagt cattgagagg tgggaggaag tcccttttcc 2280  
ttggaactgt atcttttcaa ctattgtttt atcctgtctt tgggggcaat gtgtcaaaag 2340  
tcccctcagg aattttcaga ggaaagaaca ttttatgagg ctttctctaa agtttcttt 2400  
gtataggagt atgtcactt aaatttacag aaagagggtga gctgtgttaa acctcagagt 2460  
ttaaagcta ctgataaact gaagaaagtg tctatatigg aactagggtc atttgaaagc 2520  
ttcagtctcg gaacatgacc ttagtctgtt ggactccatt taaaaatagg tatgaataag 2580  
atgactaaga atgtaatggg gaagaattgc cctgcctgcc catctcagag ccataaggtc 2640  
atctttgcta gagctatttt tacctatgta tttatcgttc ttgatcataa gccgcttatt 2700  
tatatcatgt atctctaagg acctaaaagc actttatgta gtttttaatt aatcttaaga 2760  
tctggttacg gtaactaaaa aagcctgtct gccaaatcca gtggaaacaa gtgcatagat 2820  
gtgaattggt ttttaggggc ccacttccc aattcattag gtatgactgt ggaaatacag 2880  
acaaggatct tagttgatat tttgggcttg gggcagtgag ggcttaggac accccaagt 2940  
gtttgggaaa ggaggagggg agtggtgggt ttataggggg aggaggaggc aggttgtcta 3000  
agtgtgact ggctacgtag ttcgggcaaa tctccaaaa gggaaaggga ggatttgctt 3060  
agaaggatgg cgctccaggt gactactttt tgacttctgt ttgtcttacg cttctctcag 3120  
ggaaaaacat gcagtcctct agtgtttcat gtacattctg tggggggtga acaccttgg 3180  
tctggttaaa cagctgtact tttgatagct gtgccaggaa gggttaggac caactacaaa 3240  
ttaatgttgg ttgtcaaatg tagtgtgtt ccctaacttt ctgttttcc tgagaaaaaa 3300  
aaataaatct tttattcaaa aa 3322

<210> 24  
 <211> 1823  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <223> nbla22826

<400> 24  
 tgcatttaag caatccttcc ccttccttca gaatccccac ctaatagcca tgaagctgta 60  
 gaaatggaaa taaatccaaa atagcaccat cagaataagt gccatcagca aaccagaaat 120  
 ttagttgtgt tctggaaagc cgaaagtaat aaaaccctac tgaaaaatac ccctgaacag 180  
 ggaaggtcgt gacacagcaa aggaagaatc agacaggaac aagttttagt ggtggtggga 240  
 acagcccccga ggagcccag gaaagaccac atttccactg gacccaaga gagaacaagt 300  
 gcgaattgct tgcagtgatg ggaacacctg gccatccttc aaccattacc cctccacccc 360  
 catcctcacg gattcccaca cagagcttcc aggatgattt tttctcaaaa acccccaaaa 420  
 acaaaaagta ccataatatt tgctaaaaaa aaaaaaaaaat tgaacagttc actcctcact 480  
 gagaactaat accaaagaga gaaacagaat acattctaag atagtaccag accttaaaaa 540  
 tagatgacat ggagtaatgg cagaagagtc aactatttct caagggaat aaacaaaaat 600  
 tctatacacc taaagtacag tgctttatat ttttcttaga ggagtgggtg gaggaagggc 660  
 ttgggcttac agcttgccctg gaggcttctc ttctcttgag ccctaaatga atccttcaca 720  
 tcagcatacc ctgcccactt acaaagagcc ataaatcagc tcttccctac aaaggatagg 780  
 tgtgttagaa aaattgatcg gaatactgat acaggaaagc cagccaact accttggtta 840  
 accaattttt tatttaaaaa tatgaatata taaccagtga cgccaaaaag aaagactagt 900  
 cccaaaggaa atctaggaaa tctaattcaa ggtaaagaag aaaaaagttt caagtataat 960  
 tgcagtcctt agaaagattt gaaattattt gigttaaata aaaagagaac agattggtat 1020  
 gaaaaagagg taattacaga acaaatgaac acttgagaat taaaaatatg attgacaaac 1080  
 aatagaaggg atgataatag ctgaagtctg aaacgttgaa tataaagttg aaaacttttt 1140  
 ttttctgagt ataaagcaaa acacagatgg aaaatatgaa agggattgaa gatacacagc 1200  
 cagtcaaggt ggcagaaaaa gaaatggag aggaatgaat aataacagaa atagagcact 1260  
 aagggaaatg agcaacttac aatcagaaaa gaaccctta caaaaaagga aacgagacca 1320  
 cgagcaagag caagaacaaa caggacagcg gagaatcaga ctccctaattc agaaactggg 1380  
 gttatcaagc ctagaatgtg aaattagagc ccttgcttta atttctggaa ataaaagaga 1440  
 ggattggaaa tgtggtaaag agcaagaaaa cttggaggag tgttaaacag aattctagga 1500  
 ataaaataat ataataggaa ttagaatttc catgggcaga tgtaacagca cattagacat 1560  
 agctgagaaa gaattaatga attggaaagt tgaatttaag aaattatcta gaatgcagcc 1620  
 tagagagaca gaaatggaaa acaggaaatt agttaagaga catggagata aagtggggaa 1680  
 gtctaocatg catctaacta gaatttcaga aagggaaagg gaagcgagac agtactgaag 1740  
 atgattgatg gctgagaatt ttccagactt gaaagacatt aatccacaga gtcaagaaac 1800  
 ccagtgaata ccaaggataa aaa 1823

<210> 25  
 <211> 1751

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla23899

&lt;400&gt; 25

acaagatcca aggcattccg agagtaggga ccatgcctcc aatttcttcc aggaggtctg 60  
gtgacgctga aggcagcctc taccttcctc tgcgcctgac tattccctgc tctctgagct 120  
acttctcatc tgggaaatgg aggcataacc ccagatgtac agggggattg ataacacaga 180  
tcaaacaatg agcgcgatgt caggcgacac gcaggtcctc aggcagcact agctgaatat 240  
gtgaacaaat gattggacag agggatggat ggaaggattc ttgaagcttc cactgcacag 300  
ggctgttgaa acaacacaac gcgggacctg gatgtagatt tcatctcgca gctgagccat 360  
gtgcttctct gccttgcatc tcatccaagc cccagtatg agggggacac agggctggct 420  
cagagcaggc cccgctcagc aaaactcact gaactccca cagggcaaaa cctgcaggcc 480  
ccacagggag cttgggacct gactgagaag aatcagggtt cccaggggtc tcagtcacag 540  
ggaaggtcac atccatctct ctggggaaca ttatcactgg gttgaaatgg aagccaaagg 600  
gtaaaaagac acccgagtct gtgaagcagg aactggcaaa gccatgtgg cagacatgca 660  
gcctcctata accctctgcc aaggccagcc tggaccacc ttctccacac agccctccca 720  
gacttcctct gtctggacac aacaggaccc actggggaaa acaatgatga cttgggagtc 780  
tgacaacctg ggctccattc ccaggtgtgg cagctactgg atggatgaag ggccagcatt 840  
ccctctatct ttttattttt atttttttt ttgagacagt cttggctcac tgcagcctcc 900  
gcctcctggg ttgaagcaat tctcctgcct tagcctcca agcagctggc actgcaggca 960  
tgagccacca cgcccggcta atttttgtat tticagtaga gatgggggtt taccatgttg 1020  
tccaggctgc tctcgaactc ctagcctcaa gcaatctgcc ctctaggcc tcccaaagt 1080  
ctgggattac aggtgagaat ctggccccc actccccctc ctgatgcctc agtttctctg 1140  
cctgcaaaat ggagatataa tgccaacttc aaaagattgc tgtgagtatt atatgagata 1200  
atgcctggca agagcccagt gggaggcctg gctctaaaga ggggtggcagt tttaatgaga 1260  
aggtgtcagc actcaggga cgttgactgg tgacctatgt gactgaggcc actggggagg 1320  
agaacctgca ggtcccagga cagggaagag actggtctgt cccaggaata ctctgggtt 1380  
tctgttctc tggcctaagg gtcatagcaa ggcaaaaggc aggaagggt gaagagccgt 1440  
gaaagtgata gaggctgctg ggcgtggtg ctcgcgcctg caatcccagc actttgggag 1500  
gctgaggcat gtggatcacc tgaggtcgga agtttgagac cagcctggcc aacctgggta 1560  
aggcctgtct ctgctgaaaa tgcagggatt ggccggcggt ggtggtgcat gcctgtagtc 1620  
cataatccct gctgccaggg aggtgaggc agaagaatcg ctattgaatc cgagaggcgg 1680  
aggttgagc gagccgaggt cgcaccactg cacttcaggc tgggagacag agtgagactc 1740  
agtctcaaaa a 1751

&lt;210&gt; 26

&lt;211&gt; 1264

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla20578

&lt;400&gt; 26

atgtgggatg taaaattgga tggggttaga gatgagtga ggcaattcaa cgcattggta 60  
 ggggtggaag ttctcagcag aaatcaccat ctgggttttt gctcccgtct caacctagtt 120  
 gaggtctaga gtgattaagc tggagacttc tgaggagaga gaaatgaact aaagataaat 180  
 acaactgatt taatttttagc catagcagaa cagaacaaag aagcaaccac atttcatcta 240  
 atatcaagca cctactaaag gatgcattct gcaggccagc tgcattctga tccaaaccaa 300  
 agtcactctg gttgctcttt tgctttgata acttaagagt ttagaaacaa gcggtttcta 360  
 aaaaagccaa gataacacaa taaggaccaa attttaatcc cacatagaca aagagattaa 420  
 agtgggtttt cctgaattgc ttatgttatg aacaggttac cttgtcataa ttggccttc 480  
 ggcttgggat tctaactgtt ttaggccacc agttatgaca ctgacttact aatagctttg 540  
 gactttgaaa ctgtgtgagg gtcatatagc ctcagcagtt ttcttgtagc ctgtgattgc 600  
 attgagatta tataattttt aaagacatgg cctttggacc tctgtctact agttaatctc 660  
 ttccatctac cattcaaagtg tgctatatac aactatcata tcagcttctt agcaagcact 720  
 tttctggacc tctgtcacac ccaccaagat gtctagttat gcctttcatt tgagagtttc 780  
 cctttgctgt tttttttttt ttgttttggt ttgttttggt ttgttttggt ttgttttgga 840  
 gactgagtct cgctctgttg cctaggctgg agtgcagtgg cgtgatctcg gctcactgca 900  
 atctccccct cctgggttaa agtgattttc ctgcctcagc ctccctagta gctgggatta 960  
 caggcgcagc ccaccacacc tagctaattt ttgtattagt agagatcggg ttccaccatg 1020  
 ttggccaggc tggctctgaa cacctgacct caagttaatc caccacctt ggcttccta 1080  
 agtgcctgggt ttacaggca tgagccacca cgccagcct ccctttgcat gttttttaa 1140  
 aaggcattaa gcattctgca catgttcttt agtttcagtt tgcattgagtc aacctgtgtg 1200  
  
 catcattttc cctttcacta tttcttgtct ttgctgggtga aattttaag cttcagttta 1260  
 aaaa 1264

&lt;210&gt; 27

&lt;211&gt; 1795

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla21908

&lt;400&gt; 27

acagtgtgtg caaagtgtc agcactaagg gagccagcgc acagcacagc caggaaggcg 60  
 agcgagccca gccagcccag ccagcccagc cagcccggag gtaaggaaac ggtgctcggg 120  
 cagcagctct gctcggaag aaggcacggc ttctgtcttt aagccaagtg gtcttttcaa 180  
 aggccttctt taaaatcgct cagatgggtg cttttgagtc tgcgggtctg gtttctgaaa 240  
 acccaggctg cacgcagctg cattgcaaag tgcttttgct aattcggagg gttcacctt 300  
 tctcttcaga aagcaaaggc cagttttctt aagtcacttg cagaaggaaa ttccatgtg 360  
 tatttaggaa tctgggtgtt atttgcgtg tggtatttta agctccagta agcaggggaa 420  
 ctttgaaga acacagacta tccattctgc ctgaccaatt tggcatgggg attagcttgg 480  
 caccacactg ttacctgttt tgcttctagt atatcagttt ggaacagat aaaattggca 540  
 gtaaatacgt aattccagaa tgatgaacac tttattaaga ggcattcctta aatggagcag 600

aaaactgctg agaatctttg tgagtccaag atgtatttga attcagtact ttgggggatt 660  
 taccagagtc tgtaagtcgg gaagctataa acgtgaatgt taaacacagc ccggtcttct 720  
 cttctcttga tggcagcgtt gctaactaa tttgagtatt gttctcttag aaggtgttaa 780  
 gtccaacttc aattgggggtt gggggaagca cacacacaaa tctactattt tgcaatttaa 840  
 atatactctt caggtaaaaat gtggattttg ttcaattttg ttggcatgtg caaagattca 900  
 aggagtgact gagagaactt tggagtggagg tcagggatgg gtggtagcc aagacttgta 960  
 acttccaggg agaatgagaa gtigtataaag tcagactggc tgtctctctt tctctcttcc 1020  
 tctttcttcc tttctttcct ttgtctcaca acaggattac ttagtggttc aaaagtggga 1080  
 gagagcctcc ttaaattggtt tacagccctt tgaatgtatt tgggtgcagt acatccctg 1140  
 aaacttcagt ctgcaaagtc tcaacatggt aactttgttc ttttctttt taaaggcaga 1200  
 tgctgctttt agtgctcctt tatttatctc aggaaaaatg tggacatcag ctaggcacgc 1260  
 ctagcaaaga aagtggaggg tgctgggttc tgtgctttaa ctttccatag attttaaatg 1320  
 gataaactgc ttgcccttct ttcatcagaa tatgagcttt cccagatgg aaagtctttt 1380  
 ctaaagcaaa gttgcacatg ggagctctag ctggaaaca atttgctctt ttttcccag 1440  
 tctctgccat aaacacttga atgtgcacac aactgcagag cttaatgcca caacctccag 1500  
 gagattgggg ggaggggaaa gctgccagg atgggggtgg gaaagcgaag gaagatggag 1560  
 aaatggctgc agtttgctgc ccatcagctt ttctctttaa aggggcagac attgcagacg 1620  
 tagttttaa aaagtccat aaagcatcgc caaggcagca tgcctgtgcg acacacgcag 1680  
 ggctttgggg gtgtgttttc cccgtattaa cagcaagtcg ttgaagcgtt gagaaggtat 1740  
 tatgatttct aatcaggccc agaacaggcc aagtataggc tttctgaatg aaaaa 1795

&lt;210&gt; 28

&lt;211&gt; 1620

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla22027

&lt;400&gt; 28

ttgatgcata aatggttga cagatggggg ggtgggtgga tgagtgggtc gatggatgga 60  
 tggattaata ggtgagaaat atttgatgg atgaataaat gttttgatgc atagatggat 120  
 ggacagatgg atgaatggac aggtggatgg atagataaat ggataagtgg atggatgggt 180  
 agaaggatgc atggaaggat ggatggatga acagatggat ggatggatgg atagaaaaag 240  
 aaatagagaa ttaaggacca ctgggggagg gatggattgg tgggtgactg gatcagttgg 300  
 tggatggatc ttggtggact gcctgtctcc ttcaaccct atccatccaa ccacaatctc 360  
 tttgctgttt tccctttcaa gtctgecctc ctctgacct tccctcctg ttcctcttgg 420  
 gcatggcctt ctcctcata gtccctgac tccatccttc ctgtttcgg tcatccccca 480  
 cactgttctt tcaaacatga aagtctggct gtgtctccct ctgaaact ccatggctcc 540  
 ccactacccc catcctgata aaacccaagc ctccctcca gacattgggg ccccttcca 600  
 tctggctcct gctgactagt ccaaccacca ctactcttc tctcatgca tcagatatca 660  
 tagccccatc aaaccacca ggggtccctg tacaggctgt gggccctctt tcctatctgt 720  
 ggaatgcctt gccacctgt taagggaagg tgatctgtgg gtggggcgca gctgggcct 780  
 ctctcagacc tgccctcgt cccagcctg accctctttg ccaaaatctg tgagaagact 840  
 gtgctgaagc gagtgtgaa ggagctgtgg aagctggtta tgaacacat ggagaaaacc 900

atcgtcctgc cgccctcac tgaccagacg gtgagacctg cagggggccc gaggggacat 960  
 ttaggccacc tccctggcga gagcccagaa aacttgggtgc ctagaggctg ggggtaagaa 1020  
 caaaggcatc cggctcaga gaggtcatcc aggtcaagg gccattcaag ggtcatggaa 1080  
 gccaccagag gtcagtgggg ggccattcag aggtcagaga gttcacacag gggtaaaga 1140  
 tcatcgaaga gttaaagagg tcattcagag tccattgtat ttctctggg gtcaaagaca 1200  
 tcaggtagag tcaagagacc actaaagtca tagaggtcac atgtaggtca aaatagcttt 1260  
 caaaggtcag aggtcatcta gaaaacaggt caattttggg atcaaggta tccttgagcc 1320  
 acggaaggca tagacattgg ccaggcacgg tggctcacgc ctgcaatccc agcactttgg 1380  
 gaggtcagag gcgggcagat tgcttgaggt caggagtgc agaccagcct gggcaacatg 1440  
 gtgaaatctc gtcttacta aaaatacaaa aattagctgg gtgtgacct gtgacctgg 1500  
 cttcttggga aactgaggca cgaaaactgt ttgaacctaa gaggtagagg ctgcagtga 1560  
 ctgagatggc gccactgcac actccagcct gggcaacaga acgagaccct ttctcaaaaa 1620

<210> 29

<211> 1426

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a22082

<400> 29

gagggcccat gtgctgaaaa tccgaagtgc cgcggaaagt ggaggtgagg gccgcccgcc 60  
 ctagagggtgc ccgtccgaga ggcagggtgc ggaagagcct atccttttcc ctggccatgg 120  
 ctgagtcgcc tccccagggt ttatttgac cgaagtgtg gagcgggtgg gtgctgaaga 180  
 cagctaggcc ttggcgatgt ctgggatgag gctgggtggg gaagcctttg gagccgtgac 240  
 ctgagagggc agaccttga cccactaca ttgactgcg ccttcagaac atgcagggaa 300  
 aacccactg cgggacgctc accagcagca tctccagatt gtgaaggga agaagggaag 360  
 gatctcgggg gcatgcaagc tgctctgggc tggggtggtt cagacctgga ttgactgagg 420  
 tgaaggggct ccttgacga atcacacaga aggtcgggt ctaagattg gccctgctcc 480  
 tagtcaagct gtatgaacca gggtagtcac tccggcttcc agggccttga ttctctgtc 540  
 tgtaaaaggg actttacgat gcatctggca acctcacct cctcactggg caatgtgaag 600  
 accaaatgcc ggcaatgaaa tcccagcat taggtttgtc atatagtagt cctctctaag 660  
 catttggtga atactcacag gaacacttag gccagtcagc attaatgaa aataacaggt 720  
 ggggtttttt tttttgtttg tttttgttcc ttttccgaa aataacatca ggcctttata 780  
 ctgagaagta taaagaagaa aaatgagcca gtatctcact gttcagataa accgttaata 840  
 catattttta aatgcacatg gttagaaaat gcaaacgtta cgggaaggaa caaatggaa 900  
 ttaacagacc tcccaaacag ttctctccc cttaacaag tactttggtt tcttgtttcc 960  
 tttccataaa tataactgtg ctggaatata tatttgtata ttaccaccac agggataata 1020  
 atacattatt ttgcaccttg ctttgttaaa atatttaaaa taatttaaat gacaccaca 1080  
 accctgtaaa tgtttatgga tgatgaaact gaaattcaaa agttaaatg ctggatgggc 1140  
 gtgggtggctc acacctgtaa tccagtaact ctgggaggcc aaggcagatg gatcacctga 1200  
 ggtcaggagt tcgagaccag cctggccaac atgggtgaaac cctgtctcta ctaaaaatac 1260  
 aaaaaaaat ttagcgggtc atgggtggc atgcctgtaa tcctagctat tcaggaggct 1320  
 gaggcaggag aatcgcttga acccaagacg cagaggtcgt ggtgagctga gatcatgcca 1380

ctgcactcca gcctgggcga cagaacaaga ctccgtctca gaaaaa

1426

<210> 30

<211> 2062

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23303

<400> 30

gagcttgagc tgagatggac tggctttcat gggcgcccaa ggcgctgggt gcagctttcc 60  
ccgagacccc cagatggaaa ggagggaagg aggaacccca cacactcgcc ttttgcgaga 120  
agatcggcgc gcaccccaga gtgcccgaag cctttggaat ctgcctgctg agcggagcgc 180  
gcgagcgtgg tggacaggtc ccgaacttgg ccagcgggct ttcttggcaa ctigctttgc 240  
gcagttctcc atggaaccct ggacccactg tgcctccggc gccttgcctt ttttttctt 300  
tttctttctc tcaactgtctc tttttaaatt tatgaactcg aaatgaagcg gaaagcagat 360  
atgcgcgtca gcatactttg gcggtagttc ttcattgtgg ggatggtcag cgggagatgg 420  
cacttcataa gatctgcggt ggtcacccca gtcattcatc gacgtgttgc accagtctgt 480  
ggcacttcac aaggtctgca gtgttcaccc cagtcattcat ccgatgtgtt gcaccagttt 540  
gtggcacttc ctaagtctct cggtgttcac cccagtcac atccgacgtg ttgcaccagt 600  
gtgtgttgc gtttgagccg tgctgccgac cccttcagg gcattctgca cgggcacctc 660  
ctccagcccg tgcactaaga ctcaagagag tcgaagaacc agggaatcgt tgtaataaca 720  
agcattctga attgcatcgt actgtgtact agaccttta aaaatggaac tgcggctgc 780  
ggctggaagg cgcaggcagg cgccctggag agaattcaca gggaggcaca ggacagaacg 840  
ctcccaggaa cgaggaagca ccccagaaa ggagcgtct atgggctcca ggcagccgag 900  
gaaacgcgaa cgtgagcccc gtgactgcac tcccacgtc accaacgtg ccagtgtgag 960  
cagaagcgga gcccgcagag cgccaggctg cgccgggaga tgcattcaga tgaaaaactg 1020  
cgccagagca tggcgggaac tttccgagag ggcgtgttgt ttccaggcgg ttccacctc 1080  
taatatgaaa cagtcttgggt tgattttcct tgatactact ttatgctcgg cctggttgtt 1140  
ggcaagtagc tgccgcgctc tgtacgcgcc ctgtattagt ttccactgca tgtgttttaa 1200  
cacagtcctc ctttttccac gtttatttgg gccaaccctg tctgcaaaga tccagtttaa 1260  
tacagatttg agtctacgtg ctatagcctg gaaatgtact aaagacacta caacatattg 1320  
ctgaaagaat agaattctta ttctgaatgc aaagcggaca cctagtaaaa aattctggaa 1380  
taataaaaca agcaaggctt atgtgctcag ttttggggac gcttcaattt aaaggcttag 1440  
tcattgtcac ggtgtaaggt ttaccattg ccccatcac acagatgtgg gattgttgag 1500  
agctgagtgt cctatgacct cttctgctgc ccaagaactt ggggtgggtg gtaactggag 1560  
aaatcaaagt gatcagctgc aaagaacgct tccattgctg gagcttggtt gtgcgggatt 1620  
ctccacggag gtcttaaggc agagacaaaa acaaggactt tgggaggctc ctgtgagcag 1680  
ccaaaagggt ttagagtcag gcagcctcag gttacaaatc cagtcctgca ggctaggagt 1740  
tgtgtaagct taaaaaagt actgcacttc caggaacatc atttcctac ctgctcctcc 1800  
ttctgacggg tttctgagg acaatggaat ccacactctg tgtcgaacac ttttctaatt 1860  
agcgtgtgac agacactgtt ttttttacag gaataaaaat gccagaagaa cccaagtcatt 1920  
attcatttaa agcagggtga caagtacacc aaaatctgaa aaatcatcac taaagaactt 1980  
atccatgtaa caaaaaacca ttgaaataaa agtaaaactat ggaaacaaaa tttaaaagta 2040

ataaaattta aaagtccaaa aa

2062

&lt;210&gt; 31

&lt;211&gt; 1592

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla20264

&lt;400&gt; 31

ggtccttgga gcttgaaga tttatgcata taggagagtg agatctctgg tagtagaagc 60  
ataattaatt agatgccac taaataacct aaacttttca tcaaagaaat gaacaatgct 120  
atacatttga gttcccctta ctcttgaggg atgaagaaag gcttaagttg accgttgggc 180  
agatgttagc ttgtgtctga gatctgttct tctaaaaagg ataaggctt ctctaccctc 240  
tcccttaatc atcagacaca ggactggctt catgggcatg tgacatgtgc agtcacacaa 300  
ggccccattc ttagaagggc ctccacttg gtttaatgag ctgctgccac catcttgtaa 360  
ttcttaatca agttttttta agggactctg tattttcatt ttgcactagt ccctccaatt 420  
atatgtttgg acctgacaga catatgttgc tgctaggact ggtgagaaag gaaatgaggc 480  
catcccacta actgtagtat ttatagatgg cagatcctgg tggttgtgaa aagtgggggc 540  
tttgtgact tgtaagagca tttgcagtgc agtacatggt aacactcatc catgaaataa 600  
tgaccagttt gaaatgcttt ctagtataaa cgctacagtg atgtcagctg aaacatgaat 660  
gttagaaggt atctgttcat tcttcgtaac ccctaactg taaacctggg atgttcctc 720  
acctagcttt taactgaaag gtggttatat tttgaatccc taaatcaaga agtcccagag 780  
cagctttatt atcaaacttg gaatccagca ttcactactg tgtttcactc ttctatgttg 840  
gaatattaac agcaactggag tcccataaat tatgtatttg ttgctgaatg ttgctgccag 900  
ctatgagtgg caaagcagtt ccttatgtag cttattttgg tttacaaga tcattgatgt 960  
gtatcaagat ggctcaacaa atgaaatgta gttcaaatca tagagttacg agtctgtgca 1020  
actagattga tttttcttgc ccttgagtgt cacagtgggt gcactctata ctttaaaaag 1080  
tgtgaaataa caaccaggag agatagggaa aacccaattg gcttttaaaa aaatgaatac 1140  
atgtcaaaga ttttatatta ggcattaatt aataattaat taactggcaa agtaagtgg 1200  
tactgcagtc caaaggaaaa tccaaagagt agacacatac ataggcaatg gagaatgtga 1260  
aaatgaattt gttagcagac gcacagctgg cttctcccat gggcagggtg gagtgtggga 1320  
ttaggtgtgt cttaactgga caagatttgt ttgcagtaat atcagtattc tttaagagtt 1380  
gtaaatagat tagtaaaaat actaaaagggt gtagtcccct gtagaatcag atagcccaga 1440  
aaagtgtgct agacaacacc tgaagtccg ctgaaaagat acccagtgat cactttttgc 1500  
ccatttcaaa tctttctcag tttatctgac tgtgcttccc cctcctccc ctgtgatcgt 1560  
aataatctca gtgattatcc ttcatitaaa aa 1592

&lt;210&gt; 32

&lt;211&gt; 859

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens



&lt;220&gt;

&lt;223&gt; nbla20269

&lt;400&gt; 32

aaaaaggagg ggcgtacgcg ggcaagatgg aggcgactac ggctggtgtg ggccggctag 60  
aggaagaggc gttgcggcga aaggaacggc tgaaggccct acgggagaaa accgggcgca 120  
aggacaagga agatggggag ccaaagacca agcatctcag agaagaggag gaagaaggcg 180  
agaagcacag ggaacttagg ctgcggaact atgtcccgga ggatgaggac ctgaagaaga 240  
ggaggggtgcc ccaggccaaa ccggttgacg tggaggagaa ggtgaaggag cagctggagg 300  
ccgccaagcc cgagcccgtc atcgaggagg tggacctggc caacctcgct cctcggaagc 360  
ctgactggga cctcaagaga gatgtggcca agaagctgga gaaactaaaa aagcggactc 420  
agagggccat tgccgagctg atccgtgaaa ggctgaaagg ccaggaagac agcctagcct 480  
ctgcagtgga tgctgccacc gaacaaaaga cctgtgactc cgactgaggc atgccctgcc 540  
ccaccactcg ccatcaggc ctgtcctgca ggggatggc ttgggcaggg atgggggcta 600  
ggcttgccat cacctccagt ttggcttctg agcagagact ccctgcccat caagtctgaa 660  
accccatgg atgaggtcag ctcttctgtc gctgggtggc ccctgccatt ctgaatggag 720  
gcagaaccag caacaactct gggcgtgcct gtgtctgcac atgtggatgt acatatgtct 780  
gtatatatgt atatatittg aactttctaa aaaaaaatc tggaaataga aacaagtaaa 840  
cccctgtgtg tggcaaaaa 859

&lt;210&gt; 33

&lt;211&gt; 1800

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla20406

&lt;400&gt; 33

gattttgagc ttgcattaga aaactgtcca actcacagaa atgcaagaaa atacctctgc 60  
cagacacttg tagagagagg aggacagtta gaagaagaag aaaagttttt aaatgctgaa 120  
agttactata agaaagcttt ggctttggat gagactttta aagatgcaga ggatgctttg 180  
cagaaacttc ataaatataat gcaggtgatt ccttatttcc tcttagaaat ttagtgatat 240  
ttgaaataat gcccaaactt aattttctcc tgaggaaaac tattctacat tacttaagta 300  
aggcattatg aaaagtttct ttttaggtat agtttttctt aattgggttt gacattgctt 360  
catagtgcct ctgtttttgt ccataatcga aagtaaagat agctgtgaga aaactattac 420  
ctaaatttgg tatgttgttt tgagaaatgt ccttataggg agctcacctg gtggttttta 480  
aattattggt gctactataa ttgagctaat tataaaaacc tttttgagac atatttttaa 540  
ttgtcttttc ctgtaatact gatgatgatg ttttctcatg cattttcttc tgaattggac 600  
cattgctgct gtgtctgtga catctgggtc tgctcatccc catccacaaa ctggaaaatg 660  
atttcctatg taatcatgca tccaactggg ctgtgctatt tttttaaatg gtttgtattt 720  
gaacatgggtg attcctcctt cacttcacct taacgggaatg tctttatttg aattttattt 780  
gtaaaatgtg tcctgtttta atttttcaat ctttaaaaat aatttttatg tacttttttt 840  
ttttttttta cttttcttgc actctgggtc atgggtacca ctgcaatggc ttcccctttt 900  
tttatgggat accaactgca atatggtcct caatgctgtt ctggccattt caatgactaa 960

tgccaaacat ctgtatgact aattttttta tgttaaaaaa atactgttta atgctggctc 1020  
 tatggtgatt tggttttact aaattgggtt tctcgttggg ggtggtcttt tgaatactgg 1080  
 gttttatata ttctgctatt tttaacgtgt ggttttttc gatatctggg ttctaaaaga 1140  
 aatctttgga attaagagaa aaacaagctg aaaaggaaga aaagcagaaa acaaagaaaa 1200  
 tagaaacaag tgcagaaaag ttgcgtaagc tcttaaaaaga agagaagagg taaactataa 1260  
 tattcagtat ttttaactt aaggcaacta ctgaattgaa cccaaagtgc catacggag 1320  
 gtaaagtaaa taaaaatatg aaagtatttc aagtgccaat cagtgactgt taagaatctt 1380  
 tagcaaatat gtgttccatg tattttctta ttaaagagat gaagtggat ttaaggctag 1440  
 aattctacaa aaaaagagta tcttagaatt aaaatataga ataagttact ttaattatgt 1500  
 ttttaggaaga aatatttttag aactagagca gtggttctca actaggggtg gatttattca 1560  
 cccggggaca ttgacaaga tgtggagaca tttttgattg ccataactga tagggtgcta 1620  
 ctgcatctag tgtataatgg tcagggatgc tcttaaacat attttaagt tggacgccat 1680  
 gtggatgcta tgaatgaata caataagct ttggaaatag acaaacaaaa cgtggaagct 1740  
 ttggtagctc gtggagcatt atatgcgaca aaaggaagtt tgaacaaagc aatagaaaaa 1800

<210> 34

<211> 1716

<212> DNA

<213> Homo sapiens

<220>

<223> nbla20949

<400> 34

gttgtccaag atggagggcg ctccaccggg gtcgctcgcc ctccggctcc tgctgttcgt 60  
 ggcgctaccc gcctccggct ggctgacgac gggcgcccc gagccgccgc cgctgtccgg 120  
 agccccacag gacggcatca gaattaatgt aactacactg aaagatgatg gggacatata 180  
 taaacagcag gttgttctta acataaccta tgagagtga caggtgtatg taaatgactt 240  
 acctgtaaat agtgggtgaa cccgaataag ctgtcagact ttgtagtga agaataaaaa 300  
 tcttgaaaat ttggaggaaa aagaatattt tggaattgtc agtgaagga ttttagttca 360  
 tgagtggcct atgacatctg gttccagttt gcaactaatt gtcattcaag aagaggtagt 420  
 agagattgat ggaaaacaag ttcagcaaaa ggatgtcact gaaattgata ttttagttaa 480  
 gaaccgggga gtactcagac attcaaaacta taccctccct ttggaagaaa gcatgctcta 540  
 ctctatttct cgagacagtg acattttatt tacccttcc taaacttcca aaaaagaaa 600  
 tgtagttca ctgcaaacca ctagccagta tcttatcagg aatgtggaaa cactgtaga 660  
 tgaagatgtt ttacctggca agttacctga aactcctctc agagcagagc cgccatcttc 720  
 atataaggta atgtgttagt ggatggaaaa gtttagaaaa gatctgtgta ggttctggag 780  
 caacgttttc ccagtattct ttcagttttt gaacatcatg gtggttgga ttacaggagc 840  
 agctgtggta ataaccatct taaaggtgtt tttccagtt tctgaataca aaggaattct 900  
 tcagttggat aaagtggacg tcatacctgt gacagctatc aacttatatc cagatgtgcc 960  
 agagaaaaga gctgaaaacc ttgaagataa aacatgtatt taaaacgcca tctcatatca 1020  
 tggactccga agtagcctgt tgctccaaa tttgccactt gaatataatt ttctttaaat 1080  
 cgtaagaat cagtttatac actagagaaa ttgctaaact ctaagactgc ctgaaaattg 1140  
 acctttacag tgccaagtta aagtttacct tattctcggc cgggtgcagt ggctcatgcc 1200  
 tgtaatccca ggactttggg aggccaatgc gggcggtatc cgaggtcaga tcaagaccat 1260

cctgccaca tggtgaaacc ctgtctctac taaaaaaaaat aaaaaaaatt agctgggtgt 1320  
 ggcgggtgcac gcctgtagtc ccagctactt gggaggctga ggcaggagaa ttgcttgaac 1380  
 ccgggaggcg gaggctgcag tgagccaaga tcacgccact gcactccagc ctgggtgaca 1440  
 gagcgagact ctgtttcaaa aaaaaaaagt tgaccttatt ctctaaaagg gctggctatt 1500  
 catatgatga attgtaagg aaaacttaaa gtggaagaga acacatgtga agagactttg 1560  
 aaattatcaa aagaaaaaaa aaagaccaga caaatctca tgtgccaata acttttcaag 1620  
 gtgcctttgt taaggaaatt atatccactt aattactata atatataaga ctttatgaaa 1680  
 agcactttat aaaattctaa tttaaaaggc caaaaa 1716

<210> 35

<211> 2442

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21251

<400> 35

ctctctgagct ccattcctagg ggtttttaat ttaaccaaca gccatgttga caaaagccaa 60  
 caataagcat gtcttattct agccctgac ccaacactga aagcgaagta ctttataaag 120  
 aagccagcaa ttatgagggt ttctttatgt tagtagggga aaaaatggta ataaaagtac 180  
 cagtgtagca agtgaagacc aaatttatag cactgtgcat tagatagcaa aatcagggtc 240  
 ttaacaatga aaagtaaacc tcaagtttct aaatccatat gcagatgggt aggctgtccc 300  
 tctcttagca aatctctcag cctccttctt tcccaagtgc caaggatccc tggagtaaag 360  
 ctctggggtc tgtgctctct ttctgtgagg ggaaggctgc ggccctattt gccctctct 420  
 agcaaacacc cccaccacc tgccgcttcc tgtggttatt gagccagcta ggagtactc 480  
 atggactcta acctggtttt agtcccatgt acatcggtgt tttagggttc atactgaaga 540  
 gccaatgggt tatgtgggtt tttctgtct taaatataag tttcaaggaa gggaaaacaa 600  
 aagtataaaa atgatagaac agtctagagg ccactgtaaa gtcaccgcca ctttacgtgt 660  
 atgtcagctc tgggtgttct gtatgagtaa aatggatgta aaatcataaa atcacagtga 720  
 atgtttcagg ctacactgga aaaagtatgc acttagaatt aaaggaaatt gtataattca 780  
 ccaagatttc tttgtgtaga tcaggggttg gcaactatga cccacaggct aagactggtc 840  
 agcggctctgg tttttcacag ccattgagcta agttacctt ttaaagggtt atataagtaa 900  
 ttacatcata tttttgattt tgcccttggc ccacaccaca taaaatattc aatacctggc 960  
 cttttttttt tttgagacag agtctcgtc tgtcaccag gatagagtgc actggtgcga 1020  
 ttttggtc caagcaacct ttctcctgg gttcaagcaa ttctccctgc ctacgcctct 1080  
 aagtagctgg gactacaggc acccactacc atgccttgct aatttttgta tttttaatag 1140  
 agatgggggt tcaccaatgt gccaggctg gtctcgaact cctgacctca ggggatccgc 1200  
 ccgccttggc ctcccaaaact gctgggatta cagtgagcc actgcgcca gccaatacct 1260  
 ggccttttaa gaagtgtgct gactcctggt atggatgaca gaaaatggaa taacgttttg 1320  
 tttctccagt ctaggaaaag caagtcagggt agtggataga ctgactggcg tccggggagc 1380  
 ccagggtatg tgagggccac gtggatggaa gcaaatgcct cctgcatagc ccttggtctc 1440  
 ttgtccact tgggaggagt ccatggatgt aatatttaca aaacaatttt ttcctacca 1500  
 tttgcagaaa gcattgcata tatttccttt tagctcagga aactggcatg cccaccctc 1560  
 tgctactcca tcagatgtaa atacaatgac tataagccgt acaactcccc tctcttagaa 1620

acctcagcag gaccacagag caagggagtc aaagctttct taattctctc cagtaaatga 1680  
 ctcaactaat ttgatttttt taattaagtc aaaatatcaa gagaaaaatt gctactaaaa 1740  
 cttacatttt gatccacact gatgtgcaac acaaaatgaa agttttcacc tccattccat 1800  
 tttttaaaaa ttcacgggcc aactgaaac ttgctgggtt ttagcaggag acaaagggtg 1860  
 caccacgct gtcctcatcc tgctctctct gtcccagtga cgctccagca tatgatcact 1920  
 gcagccggtc cctggcccgt gccgattctg ccacctccca gccacacaca ttgcagacc 1980  
 cacaagaaga actgtagcct tgataattc agttcaggct ggaaaaatgc catgcaataa 2040  
 tctggtttgc tttcagtaag taggcaacaa gtgaaaactg tataatttc atcacctatt 2100  
 ctgctgttct atctaaaatg agtgacctg tggtttgtga actgggccct tgtttgtgcc 2160  
 agatccttca aagatgttcc ctgtcaggac acctgtggcc ctgcccctcc tcagacacct 2220  
 tcccactggc attcacgttc cttatatgca gtgttagcca tctttggcct acgtggactt 2280  
 tttttgtaaa ttacaccatt tccagacatt aaacttttta tattatgaaa ttaccatgt 2340  
 aaaaagaact tcatattttt attgagattg ctaaggcact tggccttct cttttgtgat 2400  
 tttcagtgc tattaagca tgagttccct cagttttaaa aa 2442

<210> 36

<211> 1731

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21334

<400> 36

attaaattca acaataaatt ttatatgaat gatttggtaa aatgaatatt ttaaaaaccc 60  
 accaaaaaag taataggga ctctcatata tgctcacaca caagataaaa tgcagacagt 120  
 ttttaaaata aaaagccaat accagcatgt tctaatatca tagagcagat taaatgaatt 180  
 ctagcaaagt gcatttttga ttgaaattt ccaaaagctg ctagcatact tcagggtcac 240  
 acttatattg gctgggttat tcccttttaa tagctatcac acacacgaac acatttaaaa 300  
 taacatatcc ataaagtac attttggtc atgtttctta ggtttttgac acaagtagca 360  
 agagaacatt gaactctact ttgcagagca cagaatatcc ttcctcttg ctaataaagt 420  
 gagcactcac ataagttaaa cccaccagag ttatacattt ttcactaaaa aacttgcagt 480  
 aaatgtctgc ttgaagagga gacagtaaat taatcattaa tttagatggt atttggaac 540  
 tctagttact gtatttctc tgttcatttt cataataaag gatactgac tatcgagct 600  
 aaagagaaat gatccctaga agtttttaga gataaacatg ggaattgctg ttatatatgt 660  
 tatatatgtg tttatatata ttacatctgt atatatgaat accactaaca taaataggct 720  
 ggtatggaag caaatataaa cttttgcatg aaaaagttc aggaattga agcatggat 780  
 ttcaaaatag tgattttttt aatcttgcaa aaacttgga tttatgcaat ctttttgagg 840  
 agctctaag tagaatttgt ttgtttttat attttttaag ttctcataat cataatttct 900  
 tgaaatactt atataactat gaattttgc aatttaattc ttaaaagatt attggtttgt 960  
 cttcctaagt gaaggatata gaataaatgc ttttaacaat catatttgaa gttgaattcc 1020  
 aaacacaatc tagcaatc atactgtgac cttcactgct taccattctt acttctcaca 1080  
 ggagtaaaat caagctggag ccatcaagaa tgcagctctg gtgtttttta accagccaga 1140  
 ggctcgtgcc accactttta cccaggttat ccaagcaagt tgtacatgta caatcacgtt 1200

ctaaatgaat ttgactggc ctgcatgcta ctacagctatg ttccttcccc tgccatggca 1260  
 aggaagtgc agacttgccc agctgctctc tgctgaatcg tgtgacacat cacagcatgg 1320  
 tcaggcgaga tgggcaatcc caacatcata tttaattctg ctaatgagtt ttctaattta 1380  
 gtcttttagcc ttttaaaacc aattgcatgc tctataggat ttgtaatatc tattttaaaa 1440  
 catgatagga atgtttatgg ttcaatatag tcagggatgt aggaggggcat gcattttttt 1500  
 gtttctctgc ttttatttca ttaaaataag accacaactt tttattgttg attcagcctt 1560  
 tataagtaaa ttgtattacc aaaataagcc tcacagggtt ttttctgat agtactgcc 1620  
 ctttcagatc attatattca gatctatgaa tataattttc agcctatcca attcatgtgc 1680  
 tccagatgaa aatgtttgct ttcatgtttt gggggaaagg ttctgtaaaa a 1731

<210> 37

<211> 3077

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21356

<400> 37

gactcggtga aaaaaatgca ttttccctg gctgtttgaa aatttactta tttgcagata 60  
 agtctagatt tagtcttggga gatcaaagtc ttttatattt taaaaactta ttctttatat 120  
 tgatcaaaca tggcatatgt tagagaacca cttcttctgt catgtttatg tattttggaa 180  
 ttaagttgtt tgcattcact ttcaaaatct gccatttct gtttatgtgc acttaccaca 240  
 gatgtgtcgg gactttgcct caggggagag gtactttagc acctgtgtca ctgaggagat 300  
 ggagtgggtg acaagtactg ttgcgtgtg taacttgggg tttggccctg tggacaatat 360  
 attagcagaa tgataccaca caaaagtatt acaggattaa ggcatgtaac ttctatggta 420  
 gtccttatgt atcagcgtat acccaagttc agaaaccaca ggtgcatttt tagacctta 480  
 cttagagaac taaaggcagt tccaaccatc agcccatatg gcgggattaa tgcataaaaa 540  
 ccctcagagg gtgttgggac atcctacttc cctgtctca cccagtggaa ctctggtgtg 600  
 tgccttgagg ataaggaagt agagtggaaa ctcatcctat cattagatg tctcaatatt 660  
 ttggccttcc ctctggaatt atgagaaatt taacaaagtc tcaggaacct ttagaatcca 720  
 ttgtccaaca ctgctagaaa aactgtagga ggtacatgga gaattcctat agttcctagg 780  
 taagtgaag acatggcaca gggatcccta tccacataaa ggggaatctg gatgctgcac 840  
 acctcaattc tgagaaatcc ctgactgaac ttggaattat gacagtaaag ttttcgtcct 900  
 ttagttttct agagcagctc acagaaattt taaaaagtaa aacaaggcca ggcgcagtgg 960  
 ctcatgcctg taatcccagc tctttgggag gctgaggcgg gcagatcacg aggtgaggag 1020  
 atcgagacca tcctggctaa cagggtgaaa ccccgctct actgaaaata caaaaaatta 1080  
 gtgggcatg gtggcggcg cctgtagtcc cagatgctca ggaggctgag gcaggagaat 1140  
 cgcttgaacc tgggaggcag aagattacag taagccaaga tcgccccact gcactccagc 1200  
 ctgggcgaca gagtgaagct ccgtctcaaa aaaaaaaaaa aaaaaaaag taaaacaaaa 1260  
 ataaagtcta tgccatttaa gacgtcttct aattcagttg tgattgtctg ctctactta 1320  
 aaaaaatatt taagcttgat gttaattat tccctttcag caaatitgga tcagaaaatt 1380  
 aaagtatgtg acaagatcag gtcacctga atttccacac aatctcaaga cactgaatag 1440  
 caaaaaagta acattacata gtaagtatta ggatatttcc ttagactttg ctggatcttt 1500  
 ggtcttaagg taacatgtaa aagtagtga gccttcctt tcatggccct gtgcaatgta 1560

acgggttttct gcctcctctt cagctggaag cgttagtggg agtatgggca cagaatatat 1620  
 gtacactggc gatgctgacc atgcctccca ggtaccctgg ctctgggttc cttgacctag 1680  
 ggaacaagat tggatgaggc agatctttga gcccatgtga ctatagaatt tgctgatgat 1740  
 ataattttac aataacaatg gataggaatt ttacctctct ttttattagt ttaatatatt 1800  
 ttaatatatt gtacataagt gttcactcgc ctaattaaaa acattgagta aaccaagttt 1860  
 ttatatagac tacccttgcc atatgatgct ctttttctct aataatatgc agtttaaate 1920  
 ctgaggaate aatgcccagc atttcaccac atctgaactc tgtgtgggca ttcttactc 1980  
 gcctacaagg ggtaaacaag gctaccagaa ctggaatttg acttataggg agctaccag 2040  
 gaaggggaaa gcccttgagg ctttttccaa aacaatcttc tatttgaact gttcatcagc 2100  
 caaagtagtc cactgagggtg acaaagcttt cagaataaca aagatgggaa gataaaggta 2160  
 acactggccc acttggggct ttgacattgg attgggtgga ctgaataaac acagcctagg 2220  
 tggcctgggc ttgagcctca cttactctc cttgatacat agttcctggg ctacctctg 2280  
 accctttttc taaaatagcc agtgtctatt tctactaggc atttacttac aagttcccag 2340  
 cttttaggga aaaaagaggg agggggggagc atctagtgtt gaattagata tacatcttag 2400  
 aagtaatgag ctattggcag ctgttaaate agattcagcc acaaaccaga attctttctt 2460  
 gttgaacaag accaatgagt tagatgactt taataattcc acttttctct ccctctcttc 2520  
 tcctcttctt gaaatcagag agatgagaaa ctactcttg aaatacctcc agaggcggtt 2580  
 tattgtgttc ctttccctc caagcagctc cttttatata attttgctca ggcaaccaag 2640  
 gacagagtat cggcagaaac atggagtgtt ttgttatagg ccacctgtac ataaaagtgt 2700  
 aattatttat ttaattttcc catttgtatc atattaaagc ttgttacagt gttttaagtt 2760  
 ctgttttaaa attattttgt attttatttt tataacctag taataaaata ttcattccgc 2820  
 atgcaaaate tagttctgtt tgtgtgatgg tctggatttc aaaagtggaa aatatttttc 2880  
 taatttaata aagttattga atacaccaga tgtacaaga tcaacgggga gcagatagtg 2940  
 ttactgtaaa tgcagtagca catctagaag ttccctagaa aaagcagccc aggactgaat 3000  
 agaagctagg tgtaagtgt ccctgcagtt aggagatgtt ttctgtaat aaaattaaaa 3060  
 tattaaaagc tcaaaaa 3077

<210> 38

<211> 2043

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21418

<400> 38

gcaagtaggg gcaaaaagac acaagcaaca taagtaagca tgtgtgcagt gtgttatgtg 60  
 ataagtatta cataacaggg atgtgtgtca cagcggggaa gggggaagag ggtgagctgg 120  
 gatagtgttg taattcagat gaggttcttg gggaagatct cactaaggag atgacattga 180  
 ggaaagacct gaaggagggtg aggcagcaag ccatgaggaa gaacattcta ggcagaagga 240  
 agaaagcaag tgcaaagact tcacctcgag ggaggagcgt ttgaatgatt ttgcagaaaa 300  
 acagagaggc cggtagtact ggacagtctg agtaaagaga agaattgagat gggatggatt 360  
 cagttgcaag tgattgaaat gaataacaag cattcatcga tccaaggatt caatgaccct 420  
 aagtattctt aggtagaaag cagggtgaca ggcagggtga aataaaatct tcctctattc 480  
 tgtagagctg tgacttaacc tttagtctt gtgaaaatat gtatttattg gtactgctgg 540

acagttttcc tgctggctgt ggagagagtc ttggtgaaca gagaggcctg cagcaaaaga 600  
 gtttagagat actttctact ctatagtaat cagacagaaa tgagtcattt ttttaattac 660  
 agagggtggac accactttac ttagcaactg tccttttgaa aattagcttt aattttttt 720  
 atttcagtca taatcacgga actataatta ctggaaagga ccttgtttgt catctaacc 780  
 agctctcatt ttatagtctt ttaagaaact aaggtatgaa gtgtagctga aatactatta 840  
 caaataaatc tattcactat ttaaaacagt attctcataa ggaatctttt gaaaaatata 900  
 tataatccct taaatttata gtttcaaaaa tgttttaaaa ttttatgaa gtccctacta 960  
 tgtatttgac actattctgg catctgggaa ttcagccaca attaataagg tagatttcat 1020  
 ccctactcag tcagcattta cattgtgctg tgagggtggga gtagggctag ggagagctgg 1080  
 gagtagtatg tatagatgac aaaccagtat gttaatatat ggacaaaata atttcagaga 1140  
 aagataagtg atataaagac aatcaaagca cagtgatgaa tcagaagaat tagaaagtac 1200  
 cagagctgtg gccatgcagt gccgctctga gaaggtgaac tttgagcaga gaacagatcc 1260  
 accttcagga gttagtggta tgggaatggc atggggaggg gaccagggtt tccagtcaga 1320  
 gggtagagcc agcacaaagg cccgagcttg ctgtgttcaa agaacagaca aaaaaaccgc 1380  
 atggttgaag tgtaattggag gtgtgatatg taagatgggt gtggagaggt gcaagggtggc 1440  
 cagcccacat ggggcctctt aaagactgtg gttagacagg tctacgaaa tgtcagaaag 1500  
 ctttcaacag ggaaatgttg acatcaggct tcatTTTTca gaagatctgg cttctgtgtg 1560  
 gagaatggac tatgttggga caaaagacga agtgaggaga ttagatagat gccatttata 1620  
 ccagctccgg caagagaggt tgaggcttat gcttggttag cactggaagt gaagaagtag 1680  
 gagcagactg gattcttttc tatcagattt ggagtacat tagccgtata aatcattgtg 1740  
 gggcggggaa tgccctgtgc cgtggctcgt gcctgtaatc ccagcacttt gggaggccaa 1800  
 ggttgggagc attgcatgag gccaggagtt ccaaactagt ctgggcaaca cagcaagacc 1860  
 ctgtttctac aaaaaataa aattaaaaat taggtagacg tggtcacatg caccagtagt 1920  
 cccagctact gggaaggcta aggcctggagg atcttttgag cccaggattt tgaagctgca 1980  
 ctgagccgtg atctcaccac ggcactccag cctgtgcaac acagtgagac cctgtctcaa 2040  
 aaa 2043

<210> 39

<211> 1181

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21480

<400> 39

atatgcaacg gtcagttcct ttagatatat ttactagct ttctttttg gtcagtctgg 60  
 aaagaattcc agttcttttg ggggggtggg agcagaacaa aatgaaaata actactattt 120  
 agatttataa tgtttttacc atttctgaa tccttggaact gttttctgtt tgggtgctcc 180  
 acactatagg attcagtttg agtatttggg taccatccat ccctccaga aggtaagctg 240  
 gttgatgcaa cttttgtgga taataagtgg ctctgttctg gttgatggtg tttctgagaa 300  
 gtatagacag agaagctgtc taaacataag gaacaaagtc agtatcagtg ttacatgaac 360  
 tgtgaacatc atctggaagc caatgaatgg atccctattg tgaagtgagg cgctcaaaga 420  
 gatgtatcat actttgatct taagtaaatg tgctggttcg ttccacattg ctctgccttt 480  
 ggagcagtct gtgatgaagg tgacctaaaa agtgagcacc attagaactt gattgctgtc 540

ccaaaccatc atatctttaa aaatcctatg atcttcttag ttatgcaggt aattgaatac 600  
 cttgttaaat accaggaatg taaatggcca gaaacctaac agtgtaaaag agtgaaattt 660  
 attagtagtt cctctcataa gactattttg taaagaaata actagagata tgtttgatat 720  
 ttatagcaca ttcatgtcaa ccattaaaaa tatcaaaatt gattatgtgg gaaaatgttt 780  
 aatgggaatt gctcagtttt tttccataaa ggattataga atatgttcaa tatgatccca 840  
 ctttttgaaa atactcagga aaaaaggatg tatacccagc tgggcacagt gactcacacc 900  
 tgtaatccta acactttggg aggctcagtg ggaggatcac ttgaggccag gagtttgaga 960  
 ccagcctggt caacatagtg ggactacatc tctacaaaaa aaaaaaaat atatatatat 1020  
 atattagctg ggcatggttg tgcataacct tagtcccagc tactcaggag atctgaggtg 1080  
 agaggatttc ttgagcccag gagttggagg ctgcagttag tgaggattgc accacttcac 1140  
 tccagcctgg acgacagagc aagatcctgt ctcaggaaaa a 1181

<210> 40

<211> 2312

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21509

<400> 40

aacgatgacc tgaccaccaa gccaccatag gaaggagcca cggagctgcc tcctaggcca 60  
 ggatccagaa cgagccaagg gaaggccgag atatccccag ggtacctctt ctcagcagca 120  
 caaagaggag tttattttca aagacagtgg aagctggaaa agataaaagc cttgaaattg 180  
 aaatgcaaac aggagagccc tgccagaaca aggctgtgtg tctttcaaac cccatctgag 240  
 aaagagaggc tacctccaca gagctgcgtc agggcagggt ctggtcacct cctgggacaa 300  
 acaggaggaa gctgcgatgg ggaccaccac ctagagtggc agcccaggcc tgggtccccg 360  
 ccaccgaagg gtccgcagag cactcctggg catcctcagg tgcatgcaa gatttcagaa 420  
 agcgttacag aagtgaacga tccttcacta cagccaagat acggaaataa tgtaactgtc 480  
 tgttgatgga caaatagata aagaaaattg atgtatttac acaatggaat actttttggc 540  
 catgaagaag aaggaaagtc tcccatttgt gccaacctcg atgaaccagc aggacaggat 600  
 gctaaatgaa atgacccagg cacaaaaaga tgcatatcac atggtcttcc ttatacatgg 660  
 aactgaaaaa agctgaactc acagaagcag ggggtagact ggtggttgcc aggtgctggg 720  
 agaaatgggg agatggtgtc aaagcatgca aacctccagt tgtaagctgg taagttctgg 780  
 ggatctagca tgggtattat agctaatagt actgcagtgt ttacttgaga cttgctgaga 840  
 ggggtggacag taagtgtcct caccacacac atgcagaggg taacctgct gggatgatga 900  
 tgtgttcatt agcttgactc agtagttatc cgtgcacaat gtctatgtct attgaatcat 960  
 cacttgtaaa tcttgaacat acagtttctg tgtgtcaatc atacctcagt aagctgcggg 1020  
 ggagtgcacac attcaccact ggccatcagt aagactggac aggaccacca aggcagacat 1080  
 aggggggcta gaaacccaaa agtgcagatg gtgaccctac ttaccacata cagataacag 1140  
 agactagaag aacaatttga tcctcttcat gatgcacttt ttttgaaga caagtctttt 1200  
 caaagagaaa gatgacaata ataacgaaaa cgcccagag gacacaaatt tggaactacg 1260  
 ggcctcaagg aagccacaac acctggtatt ctcagcattt cttgggtccct gacagacctc 1320  
 tttgaccaac tgcttcaaac tgacacttct tctttctgtc acctcagata aatcatttca 1380



ccgccctaaa atgcaggctt cttcatttgc agaattgagag agggagactc tgtgcactcc 1440  
 ttctgtgcct cgcctgtttc tcttagggat cctcaacacc cttcagcttg tggacagcag 1500  
 cacacgagga cactgagcat tctgtttgag tccctctagt ggctgctgaa tggcgtagt 1560  
 actcatgtgg gcttagcgag ggcaggagct gtctcacggg agactgcccc ccacccgcct 1620  
 tccacaaatg ggggagaagc aggaggcagc agcaggcatg tgcgtggtct atcacggccc 1680  
 ttttaaaaac tgcgtttaca gaaaatgtca aactgcacag gaatagagag gaggagcgtg 1740  
 aaccagcgtg tgcccatcag ccagcttcag ccactgtccc ctctcagcca agcctccttc 1800  
 cctcggcagc tgcccatgct cacacccttt atgtccact catattattt ttgaatcaaa 1860  
 ccacagacat attaccattt catccgtgaa tgtttcagt tacatctctc aaagatagga 1920  
 tgactcattt ttataaatat aactataata ccattgtcac acctaaaaaa cttcacaatt 1980  
 tattatgta catttaccca ctcatgtccc taaggagcgg tcacacagct ttcattgagt 2040  
 aacacaacct cttctcattg ggaacatgag gagggaaggg gctgtgaaca cctaaagtga 2100  
 gcagacacgc tgaaccaaag cttggatttt cttccgtgac aacagctggg tctctgcgct 2160  
 ttgaacacac tctgatcag cagaggaaag tcaagttcag catgtctggc ttcatacttg 2220  
 tggagaggag gtgggtaac aataatgatg ataatgctat taatagcaaa ggtggaggaa 2280  
 ttaataaatg accactgtgc caggcgcaaa aa 2312

<210> 41

<211> 2764

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21527

<400> 41

agtaaagaat ctaaagtagt aaattttatt aatatgacaa gctgaaaaat aattataagc 60  
 tttattacta atttgcttga aaaagcaaac aatgaaatga ctattgatta tgatcttaag 120  
 agatgagtagt tgttttttct ctaggattta taaagatgca tcagagttca tctatagaag 180  
 gacaggtagt gtttggaag catctataat tctctttgtg aaacatcagt aagtctattg 240  
 tagtttaaga aagtttcata ttactattat tttagttttt atctctaaaa ttctatgaaa 300  
 cattttgaag tataaaataa atatttttaa aagaaagaga acagaagtag cttaaatgat 360  
 catattttac tcttaatgca cttttaactt tctcaatact atatttctct ctccatctgg 420  
 ggtacggtta aaaaagagcc ttcctaacac ctcaggaggg aaagggaac acagggcatt 480  
 ggactcccca tggaaatgaa agagtagctt cagcatttgt aggatgatta ggatgagact 540  
 gtggggttga ctgaagaatc atcaattaga gagggtggt aaaacaaact tctagaaaga 600  
 tttgggttaa ctttaaacca ttgtaacaat tatctaatac acgtgatgtt tttctagcga 660  
 ttaaaatcaa gtggaaaaat ataactatca aatttcaaat tatttcagag tcatgcatat 720  
 tgatcatcag cccatatttt caatctgctg gtgcttgttt tcaaccaaga tttaccatgg 780  
 ggctaaccat gatgtcactt gctattagtt aacctctgta cttctttact tatagttggt 840  
 ttaaacaagc aaaagctcat agagtgattt aaattatatt ttaatgatgg aaattccaag 900  
 agctctttca catactgtaa ttatctgcca taaagaagag taccocgttg gtgctctggg 960  
 cttgcatccc aacaccacca cttactggct gtgtaacttt gggcaaatta tttactctg 1020  
 gttttccttt atctgtaaca agggcatgta atagttctac tcatttggtt gttatgaggt 1080  
 ttctgcgcat tcatctacat aaagtgtgta gaatcagacc aagcacatag aagtaccatg 1140

aaagtgttca ttatggatga cggatgatgc ggagtgcacat tgtatagtta taagagttgc 1200  
 tattatggct acataatatc ctccacaatc tttcaagtat ttctaacaat gttgtgccaa 1260  
 aatatttgct aaacaaaact taattcactt ttgtgttgga tgtgttgta tgtttctcgt 1320  
 gtcctgtgcc actgagaagc aagtcaaagg aatggagcca agtaattgct ttaaatggct 1380  
 cagagatgag ataatggatc cagtcaatgt aaccacaggc agtctaaagc cagggtgtac 1440  
 accacaggcg tgggtgccaa tatcagtgtc gagacagaga tagaaggagc agcgaacaa 1500  
 atgtttaaac agcaggctca gcaaggctca acagagaaac aaaatgtttc tagaaattac 1560  
 aaaatcagag actccatcac ttggcccata catgtcaata gagtgttga ttttaattcag 1620  
 aaataatttc caactatgct tttctctgca ggtaaatgct agtaagaact actccatggc 1680  
 taatttgctc ttcagagtaa actgaactaa tactttccaa gtgcaagctg cctcaagttg 1740  
 ataaatgcct aaatttccaa aatactacaa ccaaaagcaa agttttccag ttctccagat 1800  
 acaatttttt tatagatacc tcaacatgca caaaactttt cttgtgtgct gttgtttttt 1860  
 gagacagggt ctgcctctgt caccggggcc agagtgtaat gatgtgaaca cagctcactg 1920  
 cagcctcaac ctctgggct caagcagtc tccagcctca gcccccaact agctggtact 1980  
 acaggcctgc accactattc ctagccaatt tttgtatttt ttatagagac ggggtcttac 2040  
 tgtgttgccc aggtcgtgtg tgaactcctg ggttcaagca gtccaacttc cttggtctcc 2100  
 caaagtgtca ggaatacagg catgaccacc atgcctggcc acagaaaact cttatataaa 2160  
 aatttccaac aagtatgaaa gagtgtttta atactctcta actcttcatt tactatttaa 2220  
 aataacaaaa ttgtaacttg aaagtggat aaaaaaactc aaatgagaaa taatgtctca 2280  
 acaaccgttt cttactatga aagaaaattc aatatgatct tttcacacca tataagacct 2340  
 tattttgccc ttgtttataa cccactttct ttggggggcc acatgaataa acatatttga 2400  
 catatatcca tagtctgaat taggacattt ctattcttgc ttgaagaatt tgatgtttag 2460  
 aaaaatttct cagcactggc caggcacggt ggctcatgcc tgtaatcca gcactttagg 2520  
 aggcggaggc aggcagatca gctgaggcca ggagtgtgag accagcccaa ccaacatgga 2580  
 gaaaccctgt ctctactaaa aatacaaaat tagccaggca tgggtggcaca tgccgtgaat 2640  
 cccagctact caggaggctg aggcaggaga atcgcttgaa cccaggaggc agagggtgca 2700  
 gtgagccgag ttcgtgccat tgcactctag cttgggcaag aagagtgaag ctccatctca 2760  
 aaaa

<210> 42

<211> 2141

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21551

<400> 42

catatgaaaa aaccaaagtg ctttatttaa tcaccgggtc tgcggattgt gttgaatcaa 60  
 ggtgtcagtg attctaggtg gttctgtctc cccctaaact gagacagagc agatacttca 120  
 ggaaaacgtg gaagtgtgct cgtacttcta caatcctact ggcccagcct gaccccatg 180  
 tgacagcttt gagagttttc atgcagttag agacaaacac aggtcaatga caacaactac 240  
 agcatgtgat gtgtgcttga tgatctaagc actttcagag cttttcaaaa actcagggtc 300  
 tgtgtgtctg ggcactgtga acttgaaaga aagccttcac cctgtccctg ataaccctgt 360  
 gttgtcctca gatgagccca tgtctaaagc tcccatggcc aaagacagtt accagcttct 420

cacctagccg gtcacctctg tctaacttgg tatgatcact gacaactttg gccaattaat 480  
 gaagagggtg cctcaaattg ttcaggaact cgaaaagcac atgtctgaag gggctaattg 540  
 tagtgatagg aaactataaa agtaaggatg ttggattaga agttagctga tcatcaggag 600  
 atcaagacca gcttggccaa catggtaaaa ctccatctct actaaacata caaaaattag 660  
 ctgggtgtgg tgggtgtgcac ctgtagtccc agctactcag gaggctgagg caggagaatg 720  
 gcttgaacct ggaagggtga ggttgcagtg agccgagatc tcaccactgc actccagcct 780  
 ggggtgacaga gcaagactcc gtctccagga aaaaaaaaaa aagaaatcag ttgactgtac 840  
 tacctttact ctcaatccag ggtcctatat tctagtccca cctacttatg tcttgctgtg 900  
 ggaccaccag gaagtcttag ctcttaggg cccagggaact tttcactgct aagtttaagt 960  
 aacttgattc ggatccgttg tggttccac agccttcaaa tactgtggaa gttttaattt 1020  
 aaatcttcag ataaactctt aattttttag aactccttga tttaaataaa acatgtcggc 1080  
 tgggcgcgtt ggctcacacc tgtaatccca gcattttggg aggccaaagc gggcggatga 1140  
 gtgaagaga ttgagatcag cctggccaac atggtgaaac cccgtttcta ctaaaattac 1200  
 aaaaattagc tgggcgatgt ggcgcgacc ttagtctca gctactcagg aggctgaggc 1260  
 aggagaattg cttaaccg gaagccagag ctgcagtg gccaagatcg tgccactgca 1320  
 ctccagcctc gtgacagagt gagaccccat ctcaaaaaaa aaaaaaaaaa gaggatgagt 1380

ttcttaccta gcacaagatt aatttttctg atgtgagaaa aatgtacctt catagatttc 1440  
 caaacagaat tatggctttt gaacatacag gtactaaaat ttaaaaagga tttcattttt 1500  
 ctcaatttgg attagatata ctgattgctc tcaggcgcaa acgaatttta atttagttct 1560  
 tctttttctt aagtgggagt aagcttttct acctaattta aaaaatgaga agacatttaa 1620  
 ttacgcttt ctcttccact caaagatact aataaccata ctatttaa tctaaatccc 1680  
 ttctttaag aacttcaaaa ccaaggagga aattaaaata tttaattca tttcctgac 1740  
 tcaactatca taatagaaaa agattcttag attcagacaa gaaagataca aaccttagga 1800  
 gaatttcac agtttatttc caaattttag gaaacttgat cctggaatgt tccttcattc 1860  
 ttcacctata atttgtaaca atgtgaagtc acaactgttc cataaatcct gctcaaacca 1920  
 ctctagtccc tagtaatctc tctgtccctc caaattcaaa caataaatgt agcccaaacc 1980  
 tttcatttcc caaaccaaac agcatagatc ttctaaactg acatttgtct atagtgaaga 2040  
 actagtctct cccctctccc tccaattca ttgcagacca atacttttgt taaagaagga 2100  
 aataatcaaa atgagttacc agaagaatga aacaggaaaa a 2141

<210> 43

<211> 2761

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21735

<400> 43

tagctggcgg ctccgagcg cctcttccaa agatggtcag aggggcccga ggcgtccccg 60  
 ctcccgtctg ctactagccc gcgggccagc gccgcgtccc gagccccggc gggagccatg 120  
 gctctaaaag gacaagaaga ttatatattt cttttcaagg attcaacaca tccagtggat 180  
 tttctggatg cattcagaac attttacttg gatggattat ttactgatat tactcttcag 240  
 tgtccttcag gcataatttt ccattgtcac cgagccgttt tagctgcttg cagcaattat 300

ttttaaggcaa tgttcacagc tgacatgaaa gaaaaattta aaaataaaat aaaactctct 360  
 ggcatccacc atgatattct ggaaggcctt gtaaattatg catacacttc ccaaattgaa 420  
 ataactaaaa gaaatgttca aagcctgtct gaggcagcgg atctgctaca gttcctttca 480  
 gtaaagaagg cttgtgagcg gtttttggtta aggcaattgg atattgataa ttgtattgga 540  
 atgcactcct ttgcagaatt tcatgtgtgt ccagaactag agaaggaatc tcgaagaatt 600  
 ctatgttcaa agtttaagga agtgtggcaa caagaagaat ttctggaaat cagccttgaa 660  
 aagtttctct ttatcttgct cagaaagaat ctcaagtgtt ggaaagaaga agctatcata 720  
 gagccagtta ttaagtggac tgctcatgat gtagaaaatc gaattgaatg cctctataat 780  
 ctactgagct atatcaacat tgatatagat ccagtgtact taaaaacagc cttaggcctt 840  
 caaagaagct gcctgctcac cgaataaag atccgctccc taatatacaa tgccttgaat 900  
 cccatgcata aagagatttc ccagaggccc acagccacaa tgtatataat tggaggctat 960  
 tactgcatcc tttatcagag gttcacatat gggatccttt gacaaatgtt tggattcagg 1020  
 gagcagaaat accagattat accagggaga gctatgggtt tacatgttta ggaccaaca 1080  
 tttatgtaac tgggggctac aggacggata acatagaagc tcttgacaca gtgtggatct 1140  
 ataacagtga aagtgatgaa tggacagaag gtttgccaat gctcaatgcc aggtattacc 1200  
 actgtgcagt caccttgggt ggctgtgtct atgctttagg tggttacaga aaaggggctc 1260  
 cagcagaaga ggctgagttc tatgatcctt taaaagagaa atggattcct attgcaaaca 1320  
 tgattaaagg tgtgggaaat gctactgctt gtgtcttaca tgatgttatt tacgtcattg 1380  
 gtggccactg tggctacaga ggaagctgca cctatgacaa agttcagagc tacaattccg 1440  
 atatcaacga atggagcctc atcacctcca gtccacatcc agaatatgga ttgtgctcag 1500  
 ttccgtttga aaataagctc tatctagtcg gtggacaaac tacaatcaca gaatgctatg 1560  
 accctgaaca aatgaatgg agagagatag ctcccatgat ggaaaggagg atggagtgcg 1620  
 gtgccgtcat catgaatgga tgtatttatg tcaactggagg atactcctac tcaaagggaa 1680  
 cgtatcttca gagcattgag aaatatgata cagatcttaa taagtgggaa atagtgggta 1740  
 atcttcccag tgccatgagg tctcatgggt gtgtttgtgt gtataatgtc taattgaatc 1800  
 tgcagaaatg accaagcaat cacttttttg gagtatagtt ttataaaaaa agaatgcagg 1860  
 gtttgaagtt cttacctga taattgtgtc tggcacatga taggggatca gtaaattgta 1920  
 attcctaacc ctactgtact cccaacatg gtgattcatg gtcaagaaaa atcttatata 1980  
 tatgtatata cacacatata tatgtgttca tatatatgta tacatatatg tgtatatata 2040  
 cgcatgtatg tatacatata tgtgtatata tacgcatgta tgtatacata tatgtgtata 2100  
 tatacgtatg tatgtatata tatatgtgta tatatacgta tgtatgtata catatatgtg 2160  
 tatatatatg tatgtatgta tacatatatg tgtatatata cgtatgtatg tatacatata 2220  
 tgtgtatata tacgtatgta tgtatacata tatgtgtata tatacgtgtg tatgtatata 2280  
 tatatgtgta tataatcggt tgtatgtata catatatgtg tatatatgag tgtgtatgta 2340  
 tacatatatg tgtatatata cgtgtgtatg tatacatata tgtgtatata tacgtgtgta 2400  
 tatatatata catatatatg tatatatgta tatatatata cacagttgaa tcagtgggat 2460  
 taataacctat aatctctggt tttcaaagg aatatggaat atttgacact tggtaaaagg 2520  
 tgaactacct ttgtagtga tcttttctc ttggtagcat caacactggg gataaatcag 2580  
 aaccattctg tggaatgaaa tgtttctcaa gagcctataa tatagtagat agtgcatatt 2640  
 aagatgtctg gctgggcatg gtggctcatg cctgtagtcc cagcactttg ggaggctgag 2700  
 gcgggaggat cacttgagcc tagaagtgg agactaacct ggagagaccc tgtctcaaaa 2760  
 a

&lt;210&gt; 44

&lt;211&gt; 3851

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla22247

&lt;400&gt; 44

aatttaattt acaggcttga ctacctcagc agtttacta agttcttgta cataaatgga 60  
tgttttatta aagaagaaaa ggaaggggga aggggaaggag gaggaagacg aagaagaaga 120  
aaagaagaga aggaaaggag gtgggaagga gaattcgtct ttttctgctc aatattatgt 180  
cagtgaacc aaataatgtg tctcggttcc tccccctgag cattccaccc gggtaaaaaa 240  
ggaactaage tcacctctgc tgagagaagc tgtgcatggc gagtggcccc cacacacctg 300  
gctggatgac atctgagggc tcggaggtcc ctgctgctca gtgtgccagg atgggtccac 360  
cgctctcaca ttacatttt tttatggatg atgcgtcatt ctgctaaggc agcaaaagtg 420  
aaaacaatca atagttctac ccaaatacct gttattttta gaattggggc agagtgtatt 480  
cttggctatg agcagctcag gagacactat ttttcgttgt ttaaatacaa ttgattttcc 540  
ttgcttcaga acccagatca ctacaggagc tcctgggtgtg tcgagcttgg atgaatttgt 600  
aatatgacac agtgatacct gtttgtttta ggacaccttg tgtgtaatgt cagtgttgca 660  
ttactctgtg gtccaaaac ttcaagtcca cactggagaa ggtgggggca gcctgtggac 720  
agaggcagga aagaaggac attgttttga gtgcctgtta gctgttaggc acagttccat 780  
gctcttttct gtaaaacagg ccaatgatat tggaagccaa gtttgtctgg ctatggagcc 840  
cctgtttctc cactctacca ataatacaaa ctacagtgag gaggttaaac caatacatgc 900  
acacattacc aaaacaaggt ttcaaaaaca atatttacct ttacacaggc aatttactct 960  
tattttacca gtccactcc ataataattc aattctttta aattatgggt gcaacccac 1020  
taaattggcc tcataatcta ccattgtaac atggccact gtttgatata cactggagta 1080  
caccttggtg cccttcacat ttttaaatga tgctatatgt gacttggtat ccatgtgatg 1140  
atcaagattg tatttgaaga tgttgcatag aaagtcccat cctatgattc agttttttca 1200  
tctaagaatt agaaattata acatttattc cccaaaattc tccagttgaa ttcactggag 1260  
gtattcattg cctctcagag agtctgttac ttaaaataaa gacaattaaa attaagatag 1320  
caagtatttt agcaacaaaa gccacaaaaa agaataataa ttataattgc tattgttagt 1380  
aataattgtt gaactcaciaa cctgccggcc actgctctat gagctttcaa tataactcat 1440  
tcagttctca ctatcacttt atgaagtagg taaatattac tttcacttta cagccagaat 1500  
tcctttatct tctttctcat aaatttctca ttctaaactg ttaatatata tctcagaaaa 1560  
tgaatgagat tgtgactatg actcaagaaa tacgtatttc tatgcttggg ttaaataaaa 1620  
tacaaaagcc tgtatcatct aattggcttg ataaatctca ctagcttttt aataatcatg 1680  
aaatttaaat tttttttagt aaaactttca gaatacttaa tgaaaaatca gtatgtattc 1740  
accttcaaaa aacacaaatt tccaggcata ataataatat ctgcaagtcc aaatgtaatc 1800  
acgggtgccag ggtggttga ttcagcagct tatcactgtc actggggact cagattctct 1860  
ccacctttcc actctcccat ccctcatcag ctttgccta tgagggtgc acagatccag 1920  
gtgtcacatc cagcatcata gtgacaagaa caaaggtctc tttctcagga gtctactaag 1980  
tgtcccttaa atctgatta gcaatttcc tttgctaaaa atgagttata tgccaattcc 2040  
taaactagtc actgttaggg tgtagaatca ctgtgattgg attagaaaag ctctgcctcc 2100  
tggaactagg aatgatgttg tttgccctga agcacatgga tctgtgttca ggaagagggg 2160  
tcttgcggga aatatatata ctgagtaagc agtgtctgat acaaagacga aaaatatttc 2220  
ttttgacagg aagatttggg aaaatataaa gtagtagaat tatttcccat tatttaattc 2280  
gttttaattg tcataaaaaat tagcaaacgt aatgaggaaa cgtatctgta agaattccact 2340

atgcatttgc tgtttgctct gaaatcaaca ggaccagtg ctttcattac tagaaagaag 2400  
 aaaattaggt aggttaataa aacaaacatc tggaaagtat caacactcat aaaaataaat 2460  
 ggaatcatcc tigtatata ctaaagccag gttggcattt gtcaacaact acagagaaaa 2520  
 cactacagaa tttactactt ccaacttcct ggggtgggtt gttctcattc atttaacata 2580  
 ttttcctaag tgaaaattta gttttaggtt ttgaaataca atcatataag aatatgtaga 2640  
 ctaatagtgt ttattaattt ttaataatgc ctacagtttc ccatatttgg ttgcattttt 2700  
 cctgctatcc tattgcttct gagccacctg tccccctctc aaaaacatgc aagctgggat 2760  
 ttttttcttt tcttttaact agatatcttg ccaaaatttc agactcatag taaagagttt 2820  
 ttatttttca ccaacctaat tattaaaaaa ggagtattta gaatagctct aagaattctc 2880  
 atacagcctt catcctcatt ccccaaatgt taacatttta ctacatttgc tgtatctatc 2940  
 tctttgtgtg tatatgcaca gacatacaca gaatgtctat gccttatata cacatgtata 3000  
 tctctgtgta tatatgtatg tatatatgca catattttta atagattctg agttttctaa 3060  
 tcctttgaga ataagttaca gtcatgaaac ccctttatit ttaaataact gtgtatcttt 3120  
 ctaataaaga agaaattccc caatgaaaca acaaaagatt accaaaatca gaaaactagc 3180  
 attgctataa tactcttctc taatttatag actttattca gatttcaata ctatttttat 3240  
 ggtcaaaaaa aatcaaatgt catgggtcat gccctgaatt cagctgtcat ttctctttag 3300  
 tcttctttat tctgacagtc ctttagtgtt ttcttgccag aatgctgtta atatcagtct 3360  
 tcagtaaaac atattaagag aggaaacatc atgccaaagc cagtggattt gtatggatgg 3420  
 tggcttgagt gggattcgtc ctgcctttgc agccttcctc ctgcagggat aataggtgtg 3480  
 agtacgtttc actattctct tagacatcct gacctgtacc acaaatgtga agggccaact 3540  
 ggagaactag gtgatccaac agtttggtat taatcatctc atctcttgcc aatgaatagc 3600  
 aacaagaaca tcccaaaaaca tctgaaatat ttctaaatat tctaaacatt tgtaaaaatg 3660  
 tgggacatta tagaaaaaaa cttacaaaaa catttgtttc aatcactgca tgcttagatg 3720  
 caatctttta aagtacttca agtaataat tagaatgggg atgttttaga ttggttaaag 3780  
 gttcattatt tctgaaccaa tgtgcagaat ttggcttatg agtacaagaa taaagacatt 3840  
 tggatcaaaa a. 3851

<210> 45

<211> 1863

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22477

<400> 45

agctgcaggc tccgagctgg tttattctgc ggccgaggat tacatttatg cacgaacggg 60  
 ctacttggtt ccagattccc cacttgggca caggcatagg aggcttggtt tccaaattgc 120  
 tggttttaat tgcacctgcc tttcagatta cctctgggaa tctgtgggag gagccgagag 180  
 ggtgaaaaat gtttcttagc tttgcaaaag gaagaaaact ttgtcaccca gcgggagacc 240  
 tcagccacga gtaaccggg gagacaccag aaccgggacg ggctttgact gatttccta 300  
 cgaggggtcc gtaggaaagg acgcttgaat tcggcgcttc ggcgggcgcg gcggccgcgc 360  
 gaggttccctg ctacacctcc ctctccgcgg aagtccccac gaggtggctt cagggtgtaa 420  
 cagagcgcgc ggctccagtc cgaaggcagc ggccggggga gggaaggagg ggaccgaacc 480  
 cccgaggagt ttgcagaat caacttctgg ttagagttat gggaagcgcg gttatggaca 540

ccaagaagaa aaaagatgtt tccagccccg gcgggagcgg cggcaagaaa aatgccagcc 600  
 agaagaggcg ttcgtgcgc gtgcacattc cggacctgag ctccttcgcc atgccgctcc 660  
 tggacggaga cctggagggt tccggaaagc attcctctcg aaagggtggac agccccttcg 720  
 gcccgggcag cccctccaaa gggttcttct ccagaggccc ccagccccgg cctccagcc 780  
 ccatgtctgc acctgtgagg cccaagacca gcccggctc tccaaaacc gtgttcccgt 840  
 tctctacca ggagtccccg ccacgtccc ctcgacgat gagcttcagt gggatcttcc 900  
 gtcctctc caaagagtct tcccccaact ccaaccctgc tacctcgccc gggggcatca 960  
 ggtttttctc ccgtccaga aaaagtaaga cttgatgtt attgtttcag cctccggcct 1020  
 ctctcctct ccgtcaacac ccaccaagt gaccaagcag cacacgtttc ccctggaatc 1080  
 ctataagcac gagcctgaac ggtagagaa tcgcatctat gcctcgtctt ccccccgga 1140  
 acagggcaga ggttctgccc gtcttccttc cagagccga ccaggcctcc actggcatca 1200  
 ccgacacact atgtccctc caaagccgcg gcgctggcgg cggccctggg acccgcgga 1260  
 gccggcatgc tggagaagct ggagttcgag gacgaagcag tagaagactc agaaagtgg 1320  
 gtttacatgc gattcatgag gtcacacaag tgttatgaca tcgttccaac cagttcaaag 1380  
 ctgttgtct ttgatactac attacaagtt aaaaaggcct tctttgctt ggtagccaac 1440  
 ggtgtccgag cagcgccact gcgggagagt aaaaaacaaa gttttgtagg taagcagtgt 1500  
 gggcctgagg aaaatcgaaa atggaaacct tgaaagcaga aagcctaaag tatattaata 1560  
 gatgccggtt tggaattcaa cctagtaaac atgtttcaa gttaaagaac attcttgctg 1620  
 gcagggtgca gtggcccatg ccgtaatct cagcactttg ggaggccaag gcaggagat 1680  
 cgcttgagcc cagcagttcg aggccagcct gggcaacata gcaagacctc atctctaaa 1740  
 aaacatgcaa aaattagcta ctcaggaggc tgagggtgga ggatcacttg agcccaggag 1800  
 gtcaaggcca tgatcgctgc actgtactcc agcctgggtg acagagcgag accctgtcaa 1860  
 aaa

<210> 46

<211> 2680

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22639

<400> 46

agacggacaa cttgagaaaa gcagtcaagt tccaaggaac tgacagcaac ctgcaaagag 60  
 gaaaacagca tctcctcacc tgcgtaaaat tgtctcagct tctgttgtt ctcaactgag 120  
 gttcgtaaac ccatcaggat aatccctgga gggaatagat cttgcacat ccagggaag 180  
 aaacatgtcc aagttacca gaccattgat aacagttgca ttaggttgc acctgggtaa 240  
 tctggcataa aagatctctc taggcctcac tgttgcggtg tctatccctt cacctccatt 300  
 gaaatcagca ttttgatct aggtcttcac ggaatccttg agaagagagg ctttacaat 360  
 taccagttc tgagggttca gttcacgaa aagaaatgca acttgggata atcatgaaca 420  
 ggttaaagat aagatttcaa gaagccatct aagaatacag aaccaaattg gatccattt 480  
 tttaaaaaaa tggttttgca tggaaccttg accaaggcaa atgtctttt ttcgcagaat 540  
 tgttttccag gatgccagt gattcagata gcaatgcttg gagtagaatc cgttactaaa 600  
 atagtttcaa agttgacaaa aaattttcaa agataaaagc agttttacat tgggggttgc 660

tgaggtaggc acaagaaaaa gtcaggcata aagcacaagg cagactgttt gaggtaggtg 720  
gttgctgctc actaaagttg ttccctgat ctctaaatat ggaggtcatt accaagaaat 780  
gctttggtat gaatgagagc cagatctcca ctgtgtgagc cagtgaatta tggctaattc 840  
ggctgttaca gccactgggt ggctggattt taaaccataa aactgaaga ttacctaca 900  
aagtaacagt gtggctataa gcctgagctt taatggatat acatcctcac agaaaagttg 960  
gaaataacca aaactgaagt cttaatitac cttcagttta atctgtggat ttgttcaa 1020  
actaaagatc ctcagggtcca gaattccagc atcatttatt cttttaaataa tttaagaac 1080  
ttgatccatt gtatcagtac ctcacaatca gagggtggca atgatggatg agtgattcaa 1140  
gcagtgacc cggtggaagc tgaatccat ctgtgaatgg aactgaagtg aacgtgaata 1200  
tgctgactat atcctggaag catTTTTATA ccatcttgaa atttcaaca actggctttt 1260  
gccagttaat ccagctgtct ttcaagaata aaagttgggg tttaagga tcgcctcttc 1320  
tatatttta atgattttc agtagaaatg attttacta atcaagttaa tcccaccca 1380  
tcaaaaggta ttcttagaaa tgcatagac ctaggtaact ttgaattgaa tgggagctaa 1440  
cgttctttcc aaagttttca ggtattcttt gtgtgacacc ttctcaacca ggaggcaagt 1500  
aaccgccct ccacaatctt agtattttt ttaactgca tgcctgccc ttatttgagc 1560  
tgccttttta atttattgca tatcctttt attatcttat ttggtatta ttcaatctat 1620  
acaatcttt tgtatttatt gggaaatgag taatatacaa aaaggtttc atgtattgt 1680  
ggctgagagg gcgggaaata attgtgtaca taaattagg cttttttaa aaaaatagat 1740  
tatgatgcag aatattgtt atcttagatt aaaaagtga agagccaca acattggtgc 1800  
ccttttcaga ctatttctct actctcatca tccacagtag aatttttaa cagattttt 1860  
taaagcttt cttttaaat tttctcgtt gcaaagaatg ttcttaaat tgtatgggag 1920  
caatagtatt ttgatgtt taatgacatc cgtatactt tactgtatt tgtactaca 1980  
ggcagctgtt ttcaataat gtctgtgt atttacctac gtgttttgag tgtctattc 2040  
tttctgcgg agaacaat cctaaatagt ttagtaaag gagctgagaa gctagcata 2100  
ggtttgaga aactattta gttcaactc tgaggcagca atgaaaatt aagttgcagc 2160  
tattagtga ttgctgaac ttttcat tcaaaccatg tacaattct gtatagacca 2220  
actgtttt ttgctcagt ggtggtctg ttgctcagct gcagtgagcc agttcaatt 2280  
tgcaaagggt cagtacctt ctttttaag gggttggtt attcttttt cttttgtt 2340  
ggctgaattg cagtaactag cttgcctt ctattctgta gaaatgacag ggtcttcaca 2400  
atccttcacc agtggtact aagctataat tagctgaata gaaagaatg ggaagtggc 2460  
tgaggcatat agagtatat ccaagaacac taccatata ggcatcagct ttggttaca 2520  
gagaaattt cttagtcatt agaccatgta acagtaatat atcatatgta aatctttaga 2580  
tatcaattt aaaaatctcc aaaaaagga gcaaagaatg cataagctat gtgttgcaa 2640  
aagtaattta tattaatatt ttgacctgc tatgtaaaa 2680

<210> 47

<211> 1755

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23174

<400> 47

atataaatgg agggatcacc aaaacaaaga ttatctctt gtagctatt taacctgaa 60



gcgtaggagt ctttccatta tagaagcccc tccgttccaa ggaactagcg atggggctag 120  
 gtcaatcagc agagttgaca acagggcttc tttttgtgca ccagcattcc cttcagaga 180  
 gcataagatc ctgccagtgt gccagtttg cagctgacca aacttctagg ttgtactgga 240  
 attattctat gcaacactga tccttatatg aatgcgtttc ttctgaatga tgttgactac 300  
 ccttcttaca acaaaactgt ttctttttta ttgcaaatag ggctcttggg gttttttact 360  
 tttttgtaca tatcacagta catgggtttt cactctttag tttatttcat tttattggaa 420  
 ttaacttttt ttattctaata actgacagag tttgtaatct ctatataata cgtaattact 480  
 ccaattacag cacttttacc ttgaagagca tctcagtttt tcccacaatt tcattgagtc 540  
 atcagagact gatgttgctt ctgggtttca aatttgggcc taaagaaact ttcggctgta 600  
 gaaacaaaag cacagagtga attttttaca aaagacaggg aatatagaat agtcattaca 660  
 gacacaaata accctagtag cacgaagttg gtgttttctc tgtttttact taagattaag 720  
 aagatttttg gtgactctga actctttatt tatatttcag tttaaaatat caagactaag 780  
 gggcatcagt tatctttact cttaaatatt gcccatattt taataaatta cactaatata 840  
 acgcataatt tcagcatacc agtgaataa attttggga tcacacacat ttaaatagtc 900  
 atattgtggg aatattatag ctggttaacca gctgatattg attcttatta taggaatgac 960  
 tgtaatgata gtggtggtag cagtagtgat attagcgggt gtggtgatgt gaagtaaaat 1020  
 aaaagtatat attatattgt gcccaattta tttagaaatta tttgatcaat gcttcatttc 1080  
 attaaaaatata cataaagatg tttatagtat ttttttactt tattatttaa atcataacta 1140  
 acaatatttt taaaaactta ttttcattgc tacaatgtca aatattccaa aatcagccaa 1200  
 ctacagctat atatgtgtta tgtgtgacag aagtgatctt ccttccctct ttttgagctt 1260  
 gacatgaaag tgaaagaaga ctcaatgaat aattatgagc tatttattta ataattactt 1320  
 gccttgggtg taatacagta atgaatgagt gaaacaaata ttctcattga atatgataca 1380  
 atgctgtttt ctgtatgttt catgttctat tattaaggt atccattagg ccaaaattat 1440  
 ttaatcaaat tctttatctg ataggtagat tgagagcatt ttcttaatgc attaccttgt 1500  
 acataagtat acacttggtg aagtagacga agttgaaata ttaatttcat ttggcattta 1560  
 gcatgtgaat atgattattg tttgattgtg tctgtatatt tgtttgggtg cgtgctcagg 1620  
 tgctccact actgattaat gtgtgtgcta atatcctaaa aacacatatg aggtttaaga 1680  
 aaaaattttc ttgtctgaaa acataaacat cttataaaaa ctgattttga aataaaaaact 1740  
 aaagtacttg aaaaa 1755

<210> 48

<211> 1409

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23198

<400> 48

caatgtagca gttattgata gagaaattga gaaaactgaa acgtgaccgg agtattggaa 60  
 ataacgtagt acatcaccta gcacaatgac acatagtagg tgctcaataa atttatgctt 120  
 ataatttttg tcacttctat ggcaggattt ttttattagg ttaaaattat cttttaaaca 180  
 ccttcgggaa ttttagaata ttcatataata atgtcttcaa accttcaac tgaaataaat 240  
 ttacagctga agtctgatga tttaaagtta gaaagtttaa tcttgaatat aaatgaacat 300  
 tttctctccc acattttctt gggcattttg agaagtaaat gcgttattta ttgggtccatg 360

aaatgtgact gtaaataatc ttgctatac attatgtcta tatatctgca ttcacctca 420  
atgccaaaac tagaatcatt agtcctaatg atcattttta gtacaggcag tcctcgcttt 480  
ccttgatacc atgttaaccg aaacttgtgt atgtcaacac ggtgtccttg ctttgcttg 540  
ttaagtgtga gttcttctc ccttttttta agagtgtgac aacgtttttc agtcgcctac 600  
cgaatcaggt catagactat ggaattgacc ccacccacc aacattttta cagctaccct 660  
gatttctgac cagaaaggaa aaaaaaactt tccagctcta tcacacattt tacctactct 720  
taaacttagg aggtattaca aatagcattt tctcatgttc tctttctggc ctgtacctcc 780  
ctgctaagct tccttcagtg ttcacctca cctcatagag agatgaagtg aagagacaaa 840  
cagaagtcatt tttcttctt acttttagtg tttctgggtt agttagtttg ggccaaactg 900  
tggacaagta ccttttcagg taactttttt ttcttatttc tatgtcctca acacctagtg 960  
gagtacgtag ccaatagtag atgcttaata aacatttctt aaattaatat tgttgacctt 1020  
ttctgacctt gttcttgaca gtaaggtaga taatctgcct tcaccccttt agtccttagg 1080  
aacagataaa gtcattgata tgaaagtgat cactgtcatt aatatccaca ttaaaattgc 1140  
tcttgatttt agtttctcca taatcatttt ccctaaacaa tgaactctgt tcaccttttt 1200  
ttttaaata tgcacagtga atattactgg tagcccaaatt ctctaacat aaaatttcca 1260  
ttttgtaaaa gcttctgata agcatatatg ttatgaattg aatgtttgat tattatactt 1320  
taatatctt gaaaatattg atacctggac tggaaagaaa acagacaaaa gtaaattca 1380  
gaataaatta ctgcttttaa catgaaaaa 1409

<210> 49

<211> 2433

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23328

<400> 49

tgtttctttt tttatttaaa attgtcattg ttgggtttta atttttcagc tagatgaaaa 60  
gagtatgaac tactttggaa aacttaacag ctacagatg gccatgcctc cagccctca 120  
cgtcatcttt gcaacagacg actgggctgc catggtccac cctcagccc ggtcccggg 180  
tctggatgga acgggagcac tgcgtgtgcc cactggcgtg tgtccccgg gtccctgtaa 240  
gtgccccctc accagcagca gcgtgacaca cacaagactc aagaccacc tgcagtgcc 300  
ccccagtga cggcaaacgg gcaggtgccg ttccccagt gacctgagg taggggacaa 360  
ctgagcagta tctgaccagt gccaccagg agccagtctc ctggccacat gcagaaagt 420  
tggccccctg ttacctagat gttttgtgca cctccatggg cagagggtgt ggatattgcc 480  
tggattctgt gctgtcagcg ttgctgagta tggccccagg agaccaagga gagttttgta 540  
taggctggaa aaccttttt cagtctttcc aaaattagag ggtatggcaa gtttctttt 600  
ttctctctc ctttcttcc cctcttctt tctctttacc cctcttctc tcttctctc 660  
ccttctctc ttttctctc cctctctcc tcttctctc ctttcttcc tcttcttct 720  
ccttcttcc ctctcttct tcttctctc ctttctctc tcttcttct ctttcttct 780  
ttctctctt ttttctgagt ggagggggaa atattctaaa ccaaaaatcc tagatgctct 840  
gccccaaagg acttctgcat gagaatcgca accacagtt ccccgatga gactcgccac 900  
agtggacagt gccacctct tccctcggc cccggagagg gcgaagtgg cggaagcca 960  
ggatgtgagc actggaattt cttggaagag aagcgataaa tggagaccat ggccagcgct 1020

gcttttctgtg cactctgatg actgctctct gcagccatga ggatgtggct ttacatgccca 1080  
 gggagagtgt tgagacgtct taggttgagg atgagcagat tcgagatatg ttgttgctc 1140  
 tcgggttttc gatacaacat catgacactt ctgtttcaag ctcatgtttt cgtctcccc 1200  
 tccactctta gtaaacccttg atctgtacgg agcggcctgt ccgaggctac gccggcctcc 1260  
 tggctgctgc tggactgtgc ttaggacagc gcccatgcct cggagggact ctgtcccatg 1320  
 agaaccacct gtgcaaagga acagagctgg atgtttccag gtagattttg gcctcccaga 1380  
 gcaatgcggc atttgagaag caacagttcc taactcctta tcttcaggga aggaaaagaa 1440  
 aatcacagcc taggaagatg gaggttgat tttaatctcg gttttaaaaa gaggacaaac 1500  
 aaaatgtctc taagccaggc tagatggaat gtgtccccgc tctctcctgc cgtgctgaaa 1560  
 gtcatgcctt gcggatgcct catgacagca gtggctgagt ctccccacc acccccaacg 1620  
 tggctcattt cagattgctt cggccccacc ctgcaaggat gtggtcacgg agtggccagg 1680  
 aggctccgtc tgagccacag ggatgggtgt gcagagctcc ctctccttg ggtgccaggg 1740  
 cagagattcc aggaggtga gccagagag agctgccagg ccacaccccc tcggcctcct 1800  
 gcacggccac ctcttgggtg aatcggtcca gcccaagccc ctctccccag cctcgccttc 1860  
 agcctctctc ccagcctgct tttataaggc gcacttcact caatgctgta gccaaaaaac 1920  
 gaggggcccc agggagaggg gaccagatg gccacacacg gaacgcgcct ccacagcccc 1980  
 gggaggtggc tcaactctga caggtcttcg gaggcgtgt ttgtatctaa ctgtgactgg 2040  
 gctgaagcat gatgttcct aatggttcgt agcatggtt ttatttctta cgcattcttg 2100  
 gcacacagt tagctatcct cctgacgagc aaccgcgtct cgtacctaa tggtgctccc 2160  
 cgtgggtcag cgtcctggta gcatggatcc agtctgaaag gtgaggacaa cgtggaaact 2220  
 catgagctga gcctgccccg tgggacacgt ctccctcccc cgtcaccttc tggtttaggg 2280  
 agccgtcagg tcctaaacg ttccctacaa ctttttctga aattgtgcag aaaaacagat 2340  
 ctcatataaa gaaaaaaga aacaacttgt aggaagacag agagggtgcta tgggtacaat 2400  
 ttttaataaa aacattattt ttttccttaa aaa 2433

<210> 50

<211> 2201

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23420

<400> 50

ggcgctgcct cgtctctgct acccctggtt gggcgccct gcgaagcagc tccttcgggc 60  
 agccccgggt cgcttagcgg ccaaggaggc ttcagttctt tgccgcctgc aaggcggaga 120  
 ccagaaggcg gaatccacag ctggcgacgc gggagcatct gctgtccacc agcggagcac 180  
 aggccatcaa agccgcatct gaacttgaat tctgtgcagc tgattgcaga gctggacccg 240  
 gatctgcgac cccctgtgga cagaggttga ccgtaccccg gagaggagct ttctcacgga 300  
 gggcactggt tgcagaggct ggaagtgaat taaagacgag ctcttgtttc agagttcgtc 360  
 ccctgctgag ataggaaggc agagccacct cctctcctct cccacctgca gattaagctt 420

ttctaaaaag cctaggcatc ttcttatatt cagataccct atcgtcgtca gtcatggcta 480  
 gcatcattgc acgtgtcggg aacagccggc ggctgaatgc acccttgccg ccttggggcc 540  
 attccatgct gaggtccttg gggagaagtc tcggtcctat aatggccagc atggcagaca 600

gaaacatgaa gttgttctcg gggagggtgg tgccagccca aggggaagaa acctttgaaa 660  
actggctgac ccaagtcaat ggcgtcctgc cagattggaa tatgtctgag gaggaaaagc 720  
tcaagcgctt gatgaaaacc cttaggggcc ctgcccgcga ggtcatgcgt gtgcttcagg 780  
cgaccaaccc taacctaat gtggcagatt tcttgcgagc catgaaattg gtgtttgggg 840  
agtctgaaag cagtgtgact gcccatggta aatTTTTTaa caccctacaa gctcaagggg 900  
agaaagcctc cctttatgtg atccgtttag aggtgcagct ccagaacgct attcaggcag 960  
gcattatagc tgagaaagat gcaaacggga ctgcgttgca gcagctcctt ttaggcgggtg 1020  
agctgagtag ggacctccga ctgagactta aggattttct caggatgtat gcaaatgagc 1080  
aggagcggct tcccaacttt ctggagttta tcagaatggg aaggaggagaa gaggattggg 1140  
atgatgcttt tattaacgg aagcgtccaa aaaggctcga gtcaatgggt gagagggcag 1200  
tcagccctgt ggcatctcag ggctccccac cgatagtgat cggcagtgct gactgcaatg 1260  
tgatagagat agatgatacc ctgcagcact ccgatgagga tgtgatcctg gtggagtctc 1320  
aggacctcc acttccatcc tggggtgcc ctccctcag agacagggcc agacctcagg 1380  
atgaagtgt ggtcatgtat tccccccaca attccagggc tcagtttct tccaccagt 1440  
gtggttctgg ctataagaat aacggtcctg gggagatgcg tagagccagg aagcgaatac 1500  
acacaatccg ctgttcgtat tgtgtgagg aaggccactc aaaagaaacc tgtgacaacg 1560  
agagtgacaa ggcccagggt ttgagaatt tgatcatcac tctccaggag ctgaccata 1620  
ctgagatgga gaggtcaaga gtggcccctg gcgaatacaa tgacttctct gagccactgt 1680  
aagggaccac cccaggttt cagtgaaccc ttacctatat tcagcatcca gtagtgggaa 1740  
aactggggtg ggggtggggg tgggacttct aactgcatga attaatccac aaagcgcta 1800  
tcttttgggg tggagtagaa aggtcttg ataccagcac attggaggga gatagcctga 1860  
cctctgtcct tgctccttct cctgcagcc tacgggtctg ttttctgtgt gtgcccattt 1920  
ccttgacagc ttattcttt gtgaaagtgg tataatttat tgtaaataat ttgaacaata 1980  
aaaaaggtac aaaaagtga gtacaaatta ccaaattct tccacctta tataatcatt 2040  
gtcaaccctt tgatgagtga ttttcccta tacctatgta cccagataga tatatgcata 2100  
gataaaagt atgaaatata agtgctgtt tatctgtatt tttcaccaa acaatatatg 2160  
ttgtgagctt ctatgtcaat aaatatatat atcagcaaaa a 2201

<210> 51

<211> 1806

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23483

<400> 51

tttgaactt aaactttgac caagaaattc ttacttctc acttcttcac ttcttccaa 60  
tatacagtaa gtacgtgagc cagtcacca tacactaagg ctagttgag aaaaacctt 120  
gattcaggat ggctgggtta ctaaccttga aatgtaagag atctggttt gaatgtaaaa 180  
gttgcaacac acaaacggaa gtcttaaaaa ctttttgcct tggtcagtta caggtaggac 240  
cccaataatc tgttttttgt tttctgatgg aaataataga attaggggaa atcaaatctg 300  
gttggttaggt gtctacagta ttagaagagg gtataagggc actgtttaac actaagtct 360  
aatacttcca gaaactgtgc attccagatc tacatactaa atgctcttat cttttgaaa 420  
tgggctcttg attaatagac ccatatttt tagtggcttc tatgttgtat atttgtctaa 480

aatgaaagct cttttgcgtt ctaaaactac aatatatgtc atcttatttt ccctgagtat 540  
 ccaagtatat tgcagattct atgtaaaact actaaatgac actggaatat gtttagtaga 600  
 ttagggggaa aaactataaa ggttatatac attgtttgta gttacattta ggatggactt 660  
 atccctttgg agaagagtga agtttgtttt ttcgccatgt gatgaagacc actgtgattt 720  
 tttaaaaaag tagataatac ttaaaaatggc gtaataattc tgcacttgaa tttgtactgt 780  
 taacagcaca tttggaagat tttaaaactt tttattgtct tataaatagc attcacttat 840  
 tattttggat atttaagggt tccattaagt taacactgta tttggacaaa gtgtgaccaa 900  
 attagccagt ctgttttctt ccatgtttaa ttagaagtga gaggtagaag tacttcaa 960  
 tcaacaggcc agcaagcaat cggcttaaaa ttccctttct taaatgttgt gctcttatgt 1020  
 tctcggtctt ttaatgactt tatttttaca gtacttggtc agtcacttga gatgaaatgc 1080  
 ttggggtagc ttttccatcc tcaaaactta tgtttttact agttcatagt gtttggaa 1140  
 gtatatgcc aatcactgaga ctgcatcaga gtttgcaatt ttgtatgttt cattgccaaa 1200  
 gaaggcttag tgggtgttga ctgtagtata agtcagcttt ctgtagcata agatttgatt 1260  
 ttcccatact tacttcactt gttatacatc actgattatt tgggttaaac tggactcatt 1320  
 tcaagcagtt tgcttttgtt caaatcgtga tgagaaacct aatactgtaa tttgatttga 1380  
 gccataaaac acattttaat attagcttgt attatagtta ttaagcttgt ttttgtggaa 1440  
 aaaaacttac taaaacctag gtaactctag attaggccag ttcagggtga ttttgtatct 1500  
 tagtaatgga tcatatcgta aaaatagaga taagttggga agatatattg attatgctgt 1560  
 tctgttgagg gaaaggcat gtatttagaa atttaaaact ttggttattg tgttcacatc 1620  
 atagtattca agcatcattt atagtttgggt tttgagaact tttctggtat tacgtttatg 1680  
 gcaaatgtat aaaagaaaca agttttgggt atatttttat atttgtaaag taagtttgggt 1740  
 taaagtgatc actgttcttt ttttatttta ttgtcatttc aataaaaaat atttgaaaga 1800  
 gaaaaa 1806

<210> 52

<211> 1659

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23808

<400> 52

aagacttgat gctgctaagg atctactatg tgccaggcac tgctctgggc gctgggacct 60  
 gcacctgggc tttttcgtca tgggtgcttt atagcctagt gggagagttg gtgaagtaga 120  
 tagtgattca gtgagatggg tgttatgatt ggtcaggggt ctgtgggagc accaaggaga 180  
 cagacaagat tgatgtgcac ctactctgtg ccaggcgtgt gccaggcatt ggggatgtag 240  
 tggtagttaa acaccatttg gtcttcagga gctttaattc tagtgtgttg ggtgcagggg 300  
 ggtggaatgg ggacagagag acacctaatc caccctgtgg tggctttctg gagagggagg 360  
 catctaagct gagctgtggc tgggtggagt gtgggtgggg atgagttccg ggcagcgaga 420  
 gtggtggaca ccagtttctg gggatcagag aggatccaaa gaggttcttg aaggttcatg 480  
 tggaatgtag caagagatag gagacatgga catggtgccg ggtctggttg ccaagaagtt 540  
 tagattttat ccttaggcct tggggagcga cggatatgat ctgagaaagg gagttagtgg 600  
 atttgagttt taggctggcc atttggcttt tccagcccag gtggaactca gaggagttag 660  
 caatggcctc tgccacatt ttagacaact gagcagaact ttttgaaact aggaagaccc 720

tttggtccat cttttgataa acagaatcca tacatgtcta ccccagttgg aagtatctct 780  
 gcaatgactg gaaagtaaag aggaccaagg tgaaaaataa ggctcgggaag gggagcaatc 840  
 ttgaaaacat gtcattcccat ggtggtggga agtccctgga gaagatcagg ggaaacacag 900  
 tcatagctg caagtctata agataatcc attggggagg gagccattt gtcattcatg 960  
 gctgcaagg gcaagataca gtgtggagta agcttgcaag agctgatcct ggtcccagag 1020  
 agggaaaaat atgccttggg gggtaataa cttttgttc ccagaggcag aaggattggg 1080  
 actaggccaa catagagatt ggcgatggt gtgagattct aagagtgtgt gtgcatcttg 1140  
 acaatattag aggaggctga gcccaagcag gcacattctc ttgacccct ccctcattca 1200  
 gtctgcttg gagtctactg aacatcaagc ttgctatgag caggatctta gagctgagga 1260  
 attggcctcc caatccgaac aggtgttata atcctttctt aataggttgt gctgtggacc 1320  
 caatgtgagg gctgtgctgg tgtaaatggt gacatgttga gctgggggga tgctttcggg 1380  
 gtggggggac tggttccatt ccatcaaagg ccctcttgag agtctatcca gggaccatt 1440  
 gttttacttt aacagaccag aaaagatgtt tgttttccat gtcattacc ccaggggata 1500  
 ccgaatgtgt gggtagaaat tctctgtag attaaaaatc agatttttac atggattcaa 1560  
 caaaggagcg tcatttgat tttgttttc atccatgaat gtagctgctt ctgtgtaaaa 1620  
 tgccatttg ctattaaaaa tcaattcacg ctggaaaaa 1659

<210> 53

<211> 1520

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23851

<400> 53

aattaccaa caaaattata gtctgtact ctaagaagca gccatgtctt gaggagaag 60  
 gcttaggata tgaggactag atatcagcaa ggataccata ggtttggaaa gacattttta 120  
 ttaccctta gaatacaca ctttactgat ttttaaggat gatcagcca tcatatagca 180  
 ctttattttt tcttttaaag acaatcctgt ctcatctacc ttcacttgac acaggagttt 240  
 gagaagtcct gggcaggtat acctgggtat tttgtcattg gtagtctttt taacttttag 300  
 aaaaataatcc tagtaaaacta aacctgagcc tctgaataag atgttgtctg ctttgttagc 360

tatatgagaa gaggggcaga ccacagcttt tgacggggat tttgaataa aataactaaa 420  
 accaacaata cagcaaaaagc tcatctggga aaaggacaaa gaggtaacta gtaaatgta 480  
 aggctgtaag gaaaggggta gaagatcaga ggaattctca tcaaatatt gcaattatc 540  
 ccctgaacac aaactggtaa cgggtggttg ctttaaggga ggaaattcgg agattaggga 600  
 tactgggtga aaggcagatt cttttttta ccatatattc ctttgtatct tttaaattt 660  
 gtattacatt catttgtat ctttcagaaa taaataaata aaaatgcagt agcttcctga 720  
 tcagaaagag ggaataattg ctgtcacttg cgttcagaa acatagcatc caaactgatg 780  
 tgattatggt gacctgtccc acttagtttt gctgatgtac tataattact ttctccagt 840  
 aggctgactt cagaaacagt tgcagatgca gaattttaat ccagggtatg ctgtatataa 900  
 gtaacttttg catttacaat ctaccatttg gcgttttatg gctaataatc cacaatatc 960  
 taaactaatt tataaaggca aaaactactg atttaagtga gtactctgct tctgtatccc 1020  
 cgaggtagat cagaaaaatt tcaagttgcc acgccttggc cagacccac agtatattgg 1080

ttatttggtcc tgaagttagt tctttaaaat aacttgaaat gtttcatgct tagttctagg 1140  
atctatactt tctttgattt gactgggact gaaaggctca gaataactga atataccttgg 1200  
ctctaaataa gaagctgtaa ctttgggccca ggtgcagtgc ctcatgcctt tgggaggcca 1260  
aggcaggaag gtagcttgaa gtcaggaatt taagacagtc tgggcaacat agtgagaccc 1320  
ccatctctat aaatgctttt taaaagtagc agggcatggt ggcattgtgcc tgcaatctca 1380  
gctacttgga tgggtgagtt gggagcgtcg cttgagccca ggagttctga gctgcagtga 1440  
gctgtggttg cactactgag ctgtgattgc actcaaggct gggccacaga gtgagaccct 1500  
gtatttaaag aaaagaaaaa 1520

<210> 54

<211> 2962

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24011

<400> 54

aagaacactt gtggatcaag gcgtgggtgt cttttcttt ttcattccaca gtacaggttt 60  
caaattggtt tatggaaagc tttggataac catacttagg gaacattaaa aatggtttta 120  
ttttggttgg ctcaatggtg atccaaagag ggggttgttg tagtggtttc aataaaaactt 180  
cacaaccaat gggaatcttt tttgagttt tgtggagtgc ctttaatgct ggaaataatc 240  
ctgttggcta ggactccaga actgtacgga tgagaaaagg atgcaggaaa ttctgttgtt 300  
tacacatgtg gctgcaactg agacactgga gcagcccagc aagcccagag ggtcttaaaa 360  
ataaatatga atttagattc catacatcga ttaattgagg aaacacagat cttccagatg 420  
caacaatcat caattaagtc acgcggcgac atggtggccc ctgcctcacc cccagggat 480  
acctgtaata cctgcttccc acttcatggg ctacaatctc atgtctctca caatttctgt 540  
gtcactcat ataacaccaa caaatgggat atttgtgaag aacttcgcct gcgggagctt 600  
gaagaagtca aggccagagc tgctcagatg gaaaagacca tgcggtggtg gtcggactgc 660  
actgccaact ggagagaaaa atggagtaaa gtctgagctg aaaggaacag tgccagggag 720  
gaaggaagac aactcagaat aaaactagag atggcgatga agaattgag taaactgaaa 780  
aagaaacaga gtttgcacc tcagaaggag gcattagaag ctaattgtac ccaggatctg 840  
aagcttcctg gcttcgtaga agaatcctgt gaacatacag accaatttca attgagttca 900  
caaatgcatg agtctatcag agagtatttg gtaaaaagac aattttctac aaaggaggac 960  
acaaataata aggaacaagg tgtggttatt gattctctaa aattaagtga ggagatgaag 1020  
cccaatctag atggtgttga tttattcaac aatggtggtt ctggaaacgg tgaaacgaaa 1080  
actgggctga gactgaaagc aataaatctg ctttggaaa atgaagtaac tgaaatttca 1140  
gctttgcagg tgcatttgga tgaattccaa aaaatcttat ggaaggaaa agaatgcgc 1200  
acagctttgg aaaaagaaat agagagactg gagtcggctt tgtctctgtg gaagtggag 1260  
tatgaagaac tgaaagaatc aaagccaaaa aatgtgaaag agtttgacat tcttcttgg 1320  
caacataatg atgaaatgca agaactgtca ggcaatataa aggaagaatc caaatctcaa 1380  
aacagcaaag acagagtgat ttgtgagtta agagcagagc tagagagatt gcaagctgaa 1440  
aatacctcgg agtgggacaa gagggaaata cttgaaagag aaaagcaggg actggagaga 1500  
gaaaatagaa ggctgaagat ccaggtgaaa gaaatggaag agcttttgga taagaaaaat 1560  
agattaagtg caaactctca aagtcctgat ttcaagatgt cacaatttga tctgcaagaa 1620

aaaaaccagg aattactgaa ccttcaacat gcctactata aactaaacag acaataccag 1680  
 gcaaattattg cagaactgac tcatgcaaac aaccgagtgg atcaaaatga agcagaagta 1740  
 aagaaactaa gattacgagt ggaagaacta aagcaggagc tcaatcaaaa agaagatgag 1800  
 cttgatgatt ccctgaatca gatccgtaag ctccagaggt ctctggatga agagaaagaa 1860  
 agaaatgaaa acttagagac tgaactcagg cacttgcaaa actggtaatt ttttcacaaa 1920  
 atatgctgaa ttaaagatta gggccttaaa gacatticca tacccttttc ttaaataatca 1980  
 gtaaaattgt ttttattaac tagaaatatt aatgaaaaaa acgtagacaa tacacaaatt 2040  
 aatgggcttc ttcacttctt ctaatttttg cctaacagat actgcatatt ctcaaaaaga 2100  
 caatttaaatt gtcatttaaa aacaacttta attctaagat gtgtaaatai tttgaaagtc 2160  
 aaaaagggtt ttcagaatac tttttacata aaatctgaaa gagttataat atcggtaga 2220  
 aaaagtaagt tgaaccacat acaagacgct gggtcattaa taagaaaacc attgacttta 2280  
 agtataaagt actggtttgt ttaaataatt ggtaaacttt tatgtacgtg ttgtctatgt 2340  
 ggtggggatg gcaggttgta ttaacaaaaa tgaatcattc tagagggtga acaatacatt 2400  
 tcttatataa ttttataagt catttctaatt ctttgtataa aacagaagtg agcagatgaa 2460  
 tcagaaaaaa gtgttttgta ttttaaagta acagataacc agtgattgaa tctaagacag 2520  
 gctgtaagca tcgctgagaa actaaaagga cttttgactt ttatctggat agacatttct 2580  
 acagtaaaat catggaaagg catcagcatt gcaaagtagc atctaggtag aaatcaggcc 2640  
 aaaattaagc tgtggtttcc ctctgagtag tgggaataga gaaaattagg aaattgttgt 2700  
 tatgtgaata tttcttttaa acttttatgt acattatagt ttattgcttc atatttaagt 2760  
 ttagttttta aggtaaaatg ttattttgaa caaaaagaca cttataattt tccataccta 2820  
 ttttcaactg aaggcaactt gtaagattta actcagtcac taacatactg gttttactca 2880  
 tctccccctc cattgattag ccaaaaaaaa aatgaaatct tactaattca ttattgaata 2940  
 aagaccactt ttatcagaaa aa 2962

<210> 55

<211> 1360

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24235

<400> 55

tggcttaaga cctcttttcc tccttatcta ttgactggac tgcggcaaatt gcctgctaatt 60  
 cgttattttt gtgttcattc atttagcaag ccaatttatt acgcgcttag ggtgctgcca 120  
 gggctacaaa agctgttgag actgtacttg atatgaagaa gcttgctgat tatcatggga 180  
 agactgacat aaggaagcac cataaaattc tgcgtatga gaggtatata cgggatactg 240  
 ggggttaata attgagggtg tgggtccattc aacatgagtg agacagaaac aattcataaa 300  
 ggagatgaaa tgccttgagg aatgagctct tagaagaata gttttcaaat gagtgtgcat 360  
 cacagtcacc tgtaagactt attaaaacag atcgctgggc cctacaccca gaggtgtgtg 420  
 ttcagtaggc ttagtaaac cagtaatttg tatttctatg acgttcccag gttctaattgc 480  
 tgttcccaa ggccacacct tggaaaccac cacattaaaa taccagaag gcattaattc 540  
 ccagtccttc ctctacacag ctgcaaaaca atggctcctga ccatctcatc ttgcaactac 600  
 atccttcaact gtctctcttt tgcccatagg ataagtacaa actagatctg gttactgcct 660  
 gccccaccag cctcagcatc tctcacaact aggactaact ttttctctg acaactataa 720



aatattttccc ttgccttctc aagtttgctc aaggtcaagt tatgcctttt gcctggaatg 780  
acttgacttc tcttttgttt tacttagctg gctgcttttc atctttagg ttaggtcaag 840  
gactccagga agtcttcctt ggacaagtaa tgaagagggc ataatccaag ggccaactcc 900  
catgtttgga acctgactcc attttcaggc acgtaatat gtcaaattcc ttttaaaagc 960  
acctgtctgt ctgttaacgt tgggtgcagat actgctattc cctcctcca taccattgct 1020  
gatggttact gagggtatgg gaagggccga ctagtccagc tgttcacaaa cagcccttaa 1080  
tgtcaaaactg aatactgcc aactagttcc agtttctgta tctaaagact cagcttggag 1140  
tcacttgtct ggactaaaag taaccctcctc ttgtctgggt tgtgacttcc tgtactctga 1200  
tgccccagc tttctgcctt ctagaaattt gtcagaattt ccaaaattct tgggccttcc 1260  
ttcttgctct atatattggt ttggattcat tccttttaaa aaatatttac tgtcatttca 1320  
gtagaatttt gacacaataa atataagcac atcagaaaaa 1360

<210> 56

<211> 2049

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24556

<400> 56

ggacaattaa ggtgaaaatt attctatttt aaaggggtag agttcttgag gaagaacacc 60  
tttgtgtgca tgtgtagttt attccttcta caaatattta ttggacaaca gtgttgcgac 120  
agtattctgt gcaggccact ggagatacag tgggtggaaa aactaaactt gtccccagtt 180  
ttaatggaat ttccagtcta gattgggaga taaacattaa gaaagtaatt ccaactagtgc 240  
agaattatga tacatattat gcaagaaagt atatatgctc tgggggcttg taatgaagga 300  
acataagttg gtctccagga tgctctctga ggagggggaa attgcaccga gcacaaagga 360  
tgggtaggaa ttaacagggt gaagatggaa ggggttagcc agctcctgag gtatccaggg 420  
cttttgccct ttccacagatg gcagtgggtg tataaatgga ctccattttt tctttgttcc 480  
tgactttttg gctgcaatgc caagtggctg ttttctgtct gtgtgttctg tctgtctccc 540  
agaatctcca aagtgttctg ttcatggatg gtatttaata aatggacatt cactggtaga 600  
aagtatttga gagtctatta gaagttaaatt ttgtttcaag gcaataaaat tctaaggcat 660  
ttaagagttt tctctgttta aatttttaaa caaattgtgt cttatttttt aacatcctac 720  
taaataatga cattattagg cagctacttt tagataaaat gtgataaata atactttctt 780  
cataaattct gctctaagaa tctgtttata ttttgatita aaatagaaat cttttatgta 840  
atttaaaacc tcattttgaa tggaagtgat atgaatagtt tatgcaattt ctgccaagga 900  
attaatatgg actttgtata aaccactgtc atttataatc aaaatgcttt taacttacat 960  
tgatgttggc attaacaagt attgctagat tggtagcata gaaggaaatt gcatttagac 1020  
ttactaggag ctcatgtagt cctgagggtt tataatgctt tctttgggcc atttaactgc 1080  
tgccaacttt aattcacatg attcataatg ctggaaattc aaattcactc ttaactgaaa 1140  
agtgaagtta cttaaatctt ttaaatgcta acctttggaa aaatatctga aaaataaagg 1200  
cactgccaaa agattatcat ttacataaat atctctttca gcagaagagt ttaatgtatt 1260  
gagctcagaa ggttagaata gagacttcaa tctggaagcc agcagtagcc tgttggcttg 1320  
tgaacagcag cattgttcat catactgaga aactgttgc attcaggcag aagcagagct 1380  
ggcattaaaa tgcagttaatt ttgtttcatg tgacttgtca gctgtgtgtt tttatctaaa 1440

tctttctagc ttctcttttt agtattttgt gttcaactcc tgcaatagat gaactaccta 1500  
 tttaactggt taagctctga tttatcacc acttgcaacc attctccagg tttccattt 1560  
 ctttttaa atatttaata atcagtttga acacgatttt aatgtattaa aagtaacccc 1620  
 atctcagagg gcttttctgt ctgtgcatg tgtctgtgtc tgtaaacgg actttctgaa 1680  
 gttaattaag ataaaattgc tacccttatt ttctccccag caccctattc tcttcttgtt 1740  
 tgctaattgt gttctctggg tttttccctt agatgacttt caatatttgg ctactagcca 1800  
 agtattgggt ctgagcagta aagtgctagt cccaaagaaa tgatataact gttactaaca 1860  
 ttagaataag gttcccattt cactttttga agggcgtgaa aatcttactg ctctctgca 1920  
 actgtgctca cttagtataa tctaacagtt aatattcttg tttaattgga aggatatatc 1980  
 cagtgtttt taaacaactt ttggaggtgt aattgacata caataaactg ccatatttaa 2040  
 attgaaaaa 2049

<210> 57

<211> 1373

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24800

<400> 57

tgaatttggg tattgatgag gctgaaatgg gatagttcat acaggggacct tggatttata 60  
 ctgttgcttt ttatggcca tgtaaaaagc atctactttc cccatgggag gaagggtgcat 120  
 gctgagtgat cctgttgagc tgtcactgct ctgtcaggag attcttgttg atggacatat 180  
 gtctgaccac ttgagaattg tgttgagtg aaatacactt gcataagtca attattaatg 240  
 acagttcctt tagcaactcc cagagaaggt ggggcatgac ttcttcctg gagctgactt 300  
 cagacaaatt cacagatgct aaaccctggc tttttttttt tttaacattt taatttcctc 360  
 tcatagaatc atcacaaaat aagaaaacac ttctttatat cgtaatcata attccagtgt 420  
 tttcagtttt atttcctttt tccactaaaa tcattcctgt gtttcaatca gttaaagtggg 480  
 ctcttgatt tcatttggga ttgtatttg tgttttgtt ttccattcgt ttatgtttct 540  
 ttggttcgta gtgtcagaag acgatgtttt ttatgacaaa ctgccctcgt ttgaaaggcg 600  
 ctgtgaaacg cctgcaggta tgggtgctagc caagtgatct ctagagacct agattccaaa 660  
 aatccaagcc attatccatc tgaatgctat aaacttcatg gacatgccct cacctcatga 720  
 gtgtccagtg cctctcagat gcaccctgta tatttactgt tcctcgtgga actcgtgcca 780  
 ctgaaaattt ttaagtgact atattcaaaa acagcagggt gcatgacagt ttctcagtga 840  
 agaggttcaa aaaagggtgag atgctattgc tttgtgaatt tacaaggaa agaataattt 900  
 aactgctcag aattacatgt cgggtcactg ctttttaatt taaaaataa tagagcatca 960  
 ttagtaatct tgttttctct ttgatacata ggtaaagggt gttttgtgtc tggatgccta 1020  
 aggtgattcc aggggagggg atggaagata tgtgacatct tcctgaaat ttatattgat 1080  
 atgcaatgct ttgtcattha aaacctaagc taatgttttc tacaatccat aactctgagt 1140  
 ttatcttttt ggaacatag aaggggatga cattgaagat gaaatggata cagcaattgc 1200  
 tgaatgacag ttgcccataa ttagtgcagt taaaatatgc tgatgccct gcatggccag 1260  
 gaagacttct gtcctatgca cacaagcacc aagtatcaag cgaccaccaa cacattccca 1320  
 ttcttttagg cctccatagc tttgcttttg ctttctgttt cctgaactaa aaa 1373

<210> 58  
<211> 2192  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nbla20001

<400> 58

```
ataataaaaa taaaacaatt tttacaaagt aatgggattc aaagaaagga aaaaaagatt 60
tttttttttt gtcaaatat c gatccaatc agatttgtaa aaacccccac acaaatataa 120
gaggaataat aaaaattgca aaaataaaaa aaacttttg caaatttttt tatttttcct 180
tctttctttt atatcatgtg aactaaaaca gtcttctgtt aggggatggg ggcaaggggg 240
atacctgatg acattaacaa ttaataaca ttaacattgt tgccaaagag gtggtctctt 300
tgctgaaaat gggtttcaag aaaaatctat tttataaaaa tataaagaat ttttacaaga 360
gaatctggat ttgagaaaaa aatattttga ctggctaatt taggggaaat tgacaacttt 420
gtcgcgttca tactgactg gtaacttttt agagatcaag atgtgtgttt taaactggat 480
tcgtagactg ttttttgaag gatgggctat aaacagatga tcttcataatc ttttcatagc 540
atgtaataat aattaaaaaa caattattaa ttactagggg aaaggagtgt tcgttctacc 600
cagggtacca cagttcccca cagtcaaaac ccaaaagcaa ggagatgagt tgaaagacag 660
tttttcttta agtcatcagt atgggatgtc agcagaacaa aaattaaaaa gattaatttt 720

ccttttgatc taaaacttcc ttagtttgag cagtaggtgc tacaaaatta tttacataatc 780
ttagtatcat agttaaatgt aatgtgttta ggagaggaaa acaaaagata catttgcttt 840
aaattcatta agaaattttc aaattcactt ttaggcccat gctgatagaa ttgggctgtg 900
ttggtagact tgaaacactg tttatgttgc ttgaaacact tatttattta atcgccgatg 960
tgatgatgcc tatggccgag atcaaatata gctagattgg ctagactact tatttggtta 1020
cttaactat gggaagaagc atattattgt gtcattctgt tgtgtgtgta tgtgtatata 1080
caatataaat atatatatat aaagtatttt tttctttggg ttaatttatt ataagttgta 1140
acacttggct agttttgttt gtatatgtct taaaatgttt tcttatgata ttaagtgtac 1200
agttaagag gtatcaaggt aacttgtgta gaactattct ttgatattat gtcattgtttg 1260
ttgtgaatat tttttcttac tgcacagtag aaaaataaaa acaactgagt ctttatttta 1320
atgtaactca gattggggaa aacaaaacag agctaaggga acaaatgac tgaggagca 1380
ctctcccacg tccagtgcac tgatcatttt agtatgtttg tgctttgtac ggttatatat 1440
ttaaacgaa aacaaaacaa aaaaatacaa gggttcatgc tcttcctgg gtaatagaaa 1500
cagttactcg ctatgcataa tctagttgat agttaaatgt gctattgctt ttctgtctt 1560
gttatataaa atcttttcaa tacaagttaa gtcttaatgg taataaaacg ttatggttat 1620
ttataacttg tgcttatttt gtgcattttt tcccatgctg aaccactaa gtgcattgtg 1680
acaggactgt tgttttcaca ctgaaaaggc aaactttgta gtagtcgttg tagtggtaga 1740
cagataacga ataccaaggc tgcatacatg actcctcctt taaatttttt ttctgttttt 1800
ttttcctctt ttcggttttg gatataacac cagatttcag ttcagagaac actcgttcaa 1860
cattcaggga aagcttttta cgtcacctgc tatgaatgaa cgtagtttgc tggcaaagtt 1920
ttgatgcatt tgctaagcat tagtgggaaa ggcatgccaa aatcttctct ataagtgtt 1980
caatcttggg ggaaaaaaa aggaaaaaaa atcttaggac caggcagttg tatactttag 2040
ttattaatga atgacttcat gttaatcttg ctagtttaga tgatttccaa gggaaagtat 2100
```

tgtaaagtgt ttttttcat aatcttgttg tgttgaatt atttgtactt tatctgtcca 2160  
gacaataaat gaaagtgtgt agaatggaaa aa 2192

<210> 59  
<211> 1380  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nbla20083

<400> 59  
atctacaaag ccagatgctc tgtcttcata tttgcagaca tctagacccc ttgctaaaaa 60  
cccactgaag tttttttttt atgttctttg acccacacca tcaacactac cctcaaactt 120  
aattgcccta cagcatattc tatcatgttg actaggttcc tggaaagccg gaactcatga 180  
ttctttttca aactgccaga atagaaggga gagagaaaac atttctaccc tttgatcacc 240  
agtgtgaaca gaatccggaa tgcagtttca gcgtgacctg cagtcattca tgttcattgg 300  
atttgacaga tggaaaccca aggttatcga agattggaag gttatcattg tgaagaagta 360  
gctcaaagga ctccggtttc tgtctacaag tgtgatgtct ccatgaagaa gacttagtat 420  
ggatttgggt gggtaagaaa gcatttaaac gcccaggaaa ggacatgatt aaagttgacc 480  
ttttaatact gtagtacctt gctgttaagt aaccccacta ttgtatctgc atttatcttt 540  
tgttcatcta ctttcaacta catacagtat tatataagta gagaaaaatg ggaaaatgca 600  
agcaaattca actttatttt atacattgta tatatgtaca ccctacacta ttcatttggg 660  
ttttattaaa gagatagtca caaagggtt acgaaaatca tttttgaatt gataattaga 720  
atattgaata agcaatccta tgatccacta atttgtttta tcagttaata atattaatca 780  
aagacattta ctgtatattc tagtcatttt gatttgagtt aaccccaa ataaaaattac 840  
ctgtagtgat gtctctctcc cagcccttat atgtggatat tttttaagt gacttgtatg 900  
ctgataattc tagaccaaag taaatatggc agaataatta tacatgaaaa aataattttg 960  
caaatatttt ctataattgt attcatttaa aatgttgata gcttgtgtta gtttcaggga 1020  
ggggtgtata ttttgataaa aaaatacttg actttgtaat tctgtatatt ctatacaatt 1080  
tatagcagag ccgttttaag acagccttgt cacatttttt tgtaattgt gaaaatttta 1140  
ttgagtgatg ttaagtatg cattgagtac atgaccaact agaattaaag taagtgtaaa 1200  
cagtgaacat actgtatgct gtacaagata taatgtaact tgctgtttta gcatctgtat 1260  
tttggttaga agatattatt aaatgcagat gttgaaggatt ggaaaagtct aattttattt 1320  
ttagaaataa tggatataaa tttgtttttg cttgattaaa atagcttatt cctacaaaaa 1380

<210> 60  
<211> 1833  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nbla20182

&lt;400&gt; 60

ttgtaaatgc tgggcctcct gtgatttgag tgaggccaac aggacatccc tccccagctc 60  
ccagggccca tgctgtggtg ggactgggtg gtgacccacc tcctctgggc ctctcagtgc 120  
tctgggacta taaaagctga atccccactg gagctggcct gagaggtggg aaatcagctc 180  
cccaccctgc cccagtgttg ggcactcggg acctccaaag gcagagtcca tacccaaagc 240  
accaggaaag gccactacgg tgggtgttgg gcgtggagga tgtgctgtct gggcttaacg 300  
gtcctgtcct cgggaaatga ctatagagca gagattccca gcctagggtca aattccacag 360  
ggatcggagc tactggaatc ctggaggccg acctgggcct gccccatttc ccctagggtg 420  
tcccaccgcc cttggccact ccaggccctt ggccgagaga gcaggcagca accagggtc 480  
tgtcctccct gcttctcca aagccaaaat gagagacagg caggtaccca ggcagtgc 540  
ttggaggtgt ggattccccc gcgcgtcca cccagcttgg cctttgact cccgaacccc 600  
catggggctc ctctgcccgc cgactcccat tcaggcggga gcacctgag aagatcctca 660  
tcaggtgcag gggagggtg cccagtgc 720  
gatccttggc tctgagccca ctccgaaggc aaccagctg ggcgagagc gaaggctctg 780  
gactctggct gggtagcag caccaggag gcgggagagg ccgggtgggc ttctcttcc 840  
ctttctgtca gtgcctctcc cccaagagtc ttctgtggc ttccgcccc cttgcaact 900  
tgttggaaag ggaaccggg gtctgtgag gggcaggaat tctggagcac ggtggcactg 960  
aggctcccc gcgcctcct ccaccgcct gagggaggcc agcgggctac tcctgcgtg 1020  
gtgctgtgc tgttctccc cgctgtgca ctcatatgt tcataccct cggccaccct 1080  
gcccttctgg tagccagagt gggcatgcct atccagggtc ccgctgggaa gtgggtccc 1140  
agccaccgga aattcgttcg ctgggcctcc tggactcgc gatccccagg tcccaaggc 1200  
ggatcaccca atgaatgact gccctggagg gaaacggaga ggtggacacc cttcatagg 1260  
tgggccggag aggggacagc cctgtcctca cagagctaag ctctgcgtgt catgcacgga 1320  
aggacacaca ggatcgggcg ccgagaacag ctaagtgtg gaagagccag cctcacgcc 1380  
tggggagcaa acggccctcg ccacgttctg gagctgtggg gctgagttt tgtttattt 1440  
ttattacaaa agtaatagt cttttatta tctggacatt gcagtgaagt tcaaatggaa 1500  
atacgtctgc acttccaaca tcaaaagcca actgccttg agtgtggatt tactgggaat 1560  
tgtaacttaa gccgtattgt tttttaaaa aaagtatta tcagtgaata tgcatttatg 1620  
tattcagtga aaatgtgtc gtgttgctt tataataagg caacaaaaat aagttagtac 1680  
aaataaaagg agccaatag agggaactag attgtcacg gtttaagaac tgtgggatag 1740  
gggtgggtac acgggaattc acttgaagc tccctcgatt ttgtttata ttgaaaact 1800  
tccataataa aatgtttcaa aaagtacaa aaa 1833

&lt;210&gt; 61

&lt;211&gt; 1664

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla20248

&lt;400&gt; 61

tttcaagcac catatcagca tgatcagcaa tataagtagt atctcagtgc tttgttgtt 60  
agtccagagt ttgtactcta tcaccattg taatgttct atttgcaaaa ggtaatacat 120

accctttaaa acatctttgc tttttctccc attatcgaga tgctagcagc ttcataaagc 180  
agaataacta agggcaaaca gattatataa agggttggag ctcaatgaag acaacaagaa 240  
cagcaaaggt tattgtaaaa ctggctgctt gcaggccaac aagcacatcc atatggaggc 300  
aatcagtitta tgctacctct gtctgtttga tgggattcat aatattgact ttatccatta 360  
gatttggact accagggaat aaaataagca gatggagagt aaggatttgc taggaaataa 420  
ttcagccagt cactttgaaa gctgttcaag aaacagcttt caaagtgtct ctcaaactat 480  
gtttgcccat tatcccaata atttatttcc caataatttc atgggaaaag aaggaagttc 540  
tgttggtcaga taaatctgga aaacactggt ttaagcaaag ttcagtaggt ctgcttcctt 600  
gcaggtcacc tcagagtctt tactctgcta acctaggaac tcatccaaca agtttaattt 660  
aacagctaca ctgtgtacgt cactttaaca gtcactgagc tgtgactctt gggggaaaga 720  
ttgtgcgtgt gtgtgtgtgt gtgtacacat gtgtgcacat gtgcagaatc taccaaatct 780  
taagagaaag gaacatgctg ggaaactgtc ctgtgaaaga gaatagaac ctgaagattt 840  
gaggcagtga tagcatttat gaaagcagca gataaggact aatcaccaa aggggtagct 900  
cttttgttgg ttggggaaaa caggaatttt tccccaccc aatgtgctgc attttcta 960  
tttctatgaa cacttcctaa gaaaaagctg aatgaagaac atttgcgatg caatcagctc 1020  
attaagaaac acgcactttt gtggagatac gtgctgtccc aggagatgct ctgcgaggag 1080  
ccgagtgttt ggactggagc tgctgaatgg tttctcacag ttctagaatg tttggggctg 1140  
caccctctaa gatgttgaac ccacagtaa ttgctccaaa ccactttatg ggatataatg 1200  
ctgtgagttg acacctgagg ggattgtggt cctgttcatg agtaattact tttctgttgc 1260  
ctatagaagg gccagcaata gcagatgagt agctgaacag tggttttgag taataaaacg 1320  
ttctttttta aaaaaagta atgctttctg ttaaactctg actatactct ctcttggtat 1380  
cacaacccag ctttcttttt gccttcttta ttgcagttac atatggggct gatgacttta 1440  
gggatttcca tgcaataatt cccaaatctt tctctctgtt ggaattgtga ctatcttctc 1500  
acacaagcgg ctacttggtc ttgatgcctt cccccgaaa acagcaacca aactgttctg 1560  
ggccaatata accaccttgt ggtcatgatg aagaattgcc ccctttgcc tcaacacctc 1620  
tttcttctt gaaaattaaa aacaacccct ttcaccccca aaaa 1664

<210> 62

<211> 1531

<212> DNA

<213> Homo sapiens

<220>

<223> nbla20250

<400> 62

ctttaaat gactcaaatg gaaattgtgc actttcctgt ttataccctt cccacgtta 60  
ttgtaaaaga gttaacagc agcctgatat gtaagtttca gcaaaactta tacctgtata 120  
tgtttttatt tgactcaaaa attagatatt ttacatata gtcataagaa tttgctcact 180  
ttgatgccag aagtacttaa gaagttacac ggcactaatt ttatgagttg tatgccta 240  
ttcaatttct aacctatttg acagtttctt ttaggtcagc ctttgttgg cttccatgta 300  
aatacaagtt ggtacaaatc aatagaacc attttaccta cataggcaa gtaaatgtgt 360  
gacttagaga ctgccagatt tatggtgcat ctacctttt atccatttga gcttgctttt 420  
ttatgtttgt gtattggtt ctcctgacac tatacattt aaaattttt ataacttga 480  
aaacatttct gtgctaccac tcagttctga tcaaatcctt acattttgca acactcatt 540

ctgaattttc agtaaagaaa tacacattac aaattaaagg ttaaaggccc cttttcatgc 600  
 ctttccccag tctcctcttc ctccccgga agtgtccatt ctgtgaatt caggttcac 660  
 attgccagac aaatgtagta agctagtgtt tcacatttcc aaaatcagcc ttctggcaga 720  
 cttggaagta ctcttgagaa aagaagactc gtgaccaaat tctccacag atttgtaata 780  
 atgtacatat tgaaaggact gaaggctctc agactgggaa agaaacttac ccatittaaa 840  
 attcagcatt gctcaactta cctgactgcc ggacccttc acccatgatt ctatgcactg 900  
 tattgttgga acatacattg tgaaaacact gccctgccta ggcatacccc ctttcagaa 960  
 ttaactttcc atttaattct atagtttttc actgatgtaa ctttctagac tggacaacaa 1020  
 agatgactaa tagtaatcac tccaagtga tgttgactgt tgggttgtgg tgaaatcatt 1080  
 ttgcattaaa ggaaggtaaa atactaataa attgcatatt ccttgaccag agcacagatt 1140  
 acttatgctt cttaattttt taaaatctta aatcctctgt ccaactggag tatctggcta 1200  
 tgggcatgg gtactcatat accctttgtc ttaactgat ctgttacatt ttatgttctt 1260  
 gtggctagaa gtacgtgag tttgtgtta atgtttaaca cattttcttg agtaacagtt 1320  
 ctgttaatat tgtacaagat ggtacttgaa tctttgttt gccttttttc ttctgtatt 1380  
 agaaaatctt ggtgcttttt ataagtttg tataaaagaa ttttttttaa gatttgttca 1440  
 taaaatggtc tgatccagga aaaataaaat gggaacatgg acaccatttc tgaccttcaa 1500  
 ataaaactta ttatgtattg gttttcaaaa a 1531

<210> 63

<211> 1871

<212> DNA

<213> Homo sapiens

<220>

<223> nbla20330

<400> 63

gaaatcagag gtatgttgag cagagtaacc tgatgatgga gaagaggaac aactcacttc 60  
 agacagccac agaaaacaca caggccaagg tgacagagga gttagcagcg gccactgcac 120  
 aggtctctca tctgcagctg aaaatgactg ctacacaaaa aaaggaaaca gagctgcaga 180  
 tgcagctgac agaaagcctg aaggagacag atcttctcag gggccagctc accaaagtgc 240  
 aggcaaagct ctgagagctc caagaaacct ctgagcaagc acagtccaaa ttcaaaagtg 300  
 aaaagcagaa ccggaaacaa ctggaactca aggtgacatc cctggaggag gaactgactg 360  
 accttcgagt tgagaaggag tccttggaag agaacctctc agaaaggaaa aagaagtcag 420  
 ctcaagagcg ttctcaggcc gaggaggaga tagatgaaat tcgcaagtca taccaggagg 480  
 aattggacaa acttcgacag ctcttgaaaa agactcgagt gtccacagac caagcagctg 540  
 cagagcagct gtctttagta caggctgagc tacagacca gtgggaagca aaatgtgaac 600  
 atttgtttggc ctccgccaag gatgagcacc tgcagcagta ccaggagggtg tgcgcacaga 660  
 gagatgccta ccagcagaag ctgttacaac ttcaggaaaa gtgttttagcc ctccaggccc 720  
 aaatcacagc tctaccaag caaaatgaac agcacatcaa ggaactagag aagaacaagt 780  
 cccagatgtc tggggttgaa gctgctgcat ctgaccctc agagaaggtc aagaagatca 840  
 tgaaccaggt gttccagtcc ttacggagag agtttgagct ggaggaatct tacaatggca 900  
 ggaccattct gggaaccatc atgaatcga tcaagatggt gactcttcag ctgttaaacc 960  
 aacaggagca agagaaggaa gagagcagca gtgaagaaga agaagaaaaa gcagaagagc 1020  
 ggccacgaag accttcccag gagcagtcag cctcagccag ttctgggcag cctcaagcac 1080

ccctgaatag ggagaggcca gagtcccca tgggtccctc agagcaggtg gtcgaggaag 1140  
ctgtcccgtt gcctcctcag gccctcacca cttcccagga tggacacaga aggaaagggg 1200  
actcagaagc tgaggcactc tcagagataa aagatgggtc cttccaccc gaactgtctt 1260  
gcatcccatc ccacagagtt ctagggcccc cgacttcaat tccacctgag cccctaggcc 1320  
ctgtatccat ggactctgag tgtgaggagt cacttgctgc cagcccaatg gcagctaagc 1380  
ccgacaaccc atcaggaaag gtctgtgtca gggaagtagc accagatggc cactacaag 1440  
aaagctccac aagactgtcc ctgacttcag acccggccag acctgggtgaa gaggatcata 1500  
acctgtctt caagaacact gggatttcag cagcaagtg gaagaaggac tggtaggttc 1560  
ccctccaagc cagtcacctg taagagtcct gtccctgccc agacttttta atctcttcat 1620  
taactctcag actgacctgg gagccctcct ctacctgaat ccagtgtca actgtgcccc 1680  
ggcaacaaga cctgggctga ggtctccctg gtgaactaa gggagattac accatctaaa 1740  
tcccagtga gtcaacagcc tggcctatag tcttgggaca tgtatcttct tctttgcctt 1800  
aaatctgata caagaggtca atgactttga aaataaaact aaaataaatg tctataatga 1860  
aacttgaaaa a 1871

<210> 64

<211> 1474

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23983

<400> 64

taaacattcc ttgtgtatct ttaagcatgc ttctcctgaa atttaactac attagtagtt 60  
gacatttgta tacatatatc ctaatacaag agtaggataa ggtggaaatg taatggcctg 120  
agggatgggtg aagcattctt ttagtatttt tcatcatgtt gggctcctag attgtactgg 180  
ggttgcccat aaatcaaacc ccatactctt agaattcatt atattatggt gatatccgaa 240  
cctagtgaat ggtatgcttg ggtgttttcc attgagagtg gatggacctc tttataaagt 300  
tggttgctgc aaaatccagt tcttccaaaa gccactttat ttagggttta ttcacaagtc 360  
atatccattt tggtagctg tttgtttcct aatatttatt aaccacctta taccaaatgt 420  
cttgcaaaaga aatgttatta aaaccttgaa tttttacaaa tgtaaaaaac aaaaagtgtg 480  
ttaatgtatt tgttcaggaa aagctacata ccgaagggtt tttgtatatg aattctgttg 540  
tggggagacc catttgtaat ctatatggca gttccatctg ggttttaagt ttagatttca 600  
ccgtgtctta gtgcttcatt ctattgggtt attggaacat gtaataaata ggagtagtga 660  
tgtattaaaa cacaagtatt cattaatgtt ttatatcttc actaaaattc tatagttatg 720  
aaactatttt atcaatcaag gtgttatatt tcagtcagaa gtgaaaattt atgaagagta 780  
tttgaagtgt gtacagaaa taaactagac ttacaggtag gctagatcag aacgttaaca 840  
tatgaacctg cagaaatctg gtaagactta aattcagtg gaggaataac tctagttctc 900  
tcctatgagc atttccataa agccatctga tttggcattc ttactggagc tgcagacaga 960  
aatctacaaa gacaaaagta aacaaaatta agttattatt ccactgttag gaatggaaat 1020  
aaacttgtga agtctgttta ttttgaagta ttggtgaact aggtctgcta attgataact 1080  
gcagcagttt gtgtttactc cagttcatca gcttaggtca tttgaaagat ataagagctt 1140  
aaggcaagaa agaaataaca tggaattcta tttgaaggac aacagaacat tcttgaaaa 1200  
gcagctccag ttggttttcc aactgtcaaa ctigaatgtg taagtcccca cagagcatgg 1260



acagtcggtg cagagttcca aggaacaat tattgcctga tgaccattc cattttgtat 1320  
acactctttg gttcgtatag gccatattcc aactggcttt ttagtaatag aaatccagta 1380  
tataatgtat caaatacaat tgaggttcta acctagtgtg ttaatttata tgaatttgga 1440  
tttttaaaaa gtaataaaaa gttaaatgta aaaa 1474

<210> 65

<211> 2167

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a24111

<400> 65

cttataaaaa ttttgaagcc catcccatg gatttattat aatacagctc tgatataatct 60  
taaagttaac ccgttttccg tagatgttaa gggctttact ggttgaggta acctatttca 120  
aatggctctg tgggttttgt ggtacctgtg caagaattca ataagaattc tcaggctgtc 180  
tgtattttct ttaggactt tggagatctc tcaagttgta ctgttttcta gtattcctga 240  
gtatattcct tttgtaacgt gaaagtaaat agtttatatt tgatgatttt ttttttttt 300  
ttttgagacg gagtcttctg ctgtcaccca ggctggagta cagtgggtgag atcacggctc 360  
actgcaagct ctgctcccg ggttcacgcc attctctgc ctaagcctcc tgagtagctg 420  
ggactacagg cgcccgcac cacaccggc gaattttttg tatttttagt agagatgggg 480  
tttcaccgtg ttagtccagg tggctcaat ctctgaacc ttgtgatcca cctaccttg 540  
cctcccaaag tgctgggatt acaggcgtga gccacagtgc ccggcctgta tttggtgata 600  
ttttaaaaaa ttctactttg accttaagtg cttcaagaat tgtgttcagt tagtagtct 660  
tttgtaagac taactttcat atgctatctt tgctccatga gctatcatag tactgtttc 720  
tttcattacc cgtaagagtg gctctatcac agcatttact gtttaagggt acagtttag 780  
ctctgttaa ctctactttt atttgtgatg gctgtgttc aactacctt gatttataaa 840  
tgtagtaatg ttttaataa ctatatgtt tggctcctta atacctctt tgattggtga 900  
ggtaacagt atgtggatga tgaaataaaa acgtttccc aagtcactaa acacagttt 960  
caattcattt tttttttaca ttttaattt acatctaact actgttaggt atgcagccc 1020  
ttcctttttg ccttcagtag aatatagtta tataagtagt ctcatctaga ttcttgggac 1080  
agaacggcct gtgtattgat ctttctttaa tggcttgga cagcttctat atattctgac 1140  
aggctttgga agcatgttaa tatccgtgtg ttaattgtc atcttctgc ctgggaaggc 1200  
agtagaagaa agaatttaca tttgtatagt ctgtagtaca ggctctgtgc tgattgcaag 1260  
gcactcttga gagaaattca ttcttattt gcagaagaag aactgaaact tcattaagtc 1320  
attaagcaac ttgtcagggt ggtggaactg agctttaaat atggactttt tccagtctca 1380  
attcagcatt atactaggct gcctccatgt gttttcaaa gcccattca agttttactt 1440  
ctatggtaaa ctaattttac atacacaaat ctttcatct tctgaacttc ctttatggct 1500  
ttactgtcac cccactagta tttgatgtct tagctattaa ctaattcctg attatttcac 1560  
ttgtcacatc aggaacccta tcctcttagt tctccattg agatttcaact gctggactaa 1620  
gattattctt gattcgtagt cattggtttc tgtttccatt catttcagc actgattatg 1680  
ttaatcgat tgcttgagtt ttttcttctg tcaatgtgt ttattacatt cattttgtt 1740  
catatacaca catttttttt ttttaactg gcattttgag gatattggtt taatggaagg 1800  
aaaaaggaat ggtgcaaagc acatgggtatt tgaattcaa agacctgac cctcagcatt 1860

agcaagtcac ttgttttctg agcctcagtt ttcttactct caaatgaggt aatatccgaa 1920  
 agtactttga caacacacta aagcctgatg cagatttcct ttttgaagta attgtgctgt 1980  
 ttctattcat attggatatg gtattctatg gtattggcta tagatacata cattttaaaa 2040  
 tgttatitaa cagcatgtaa atgttcattt catgccatgt gatcatgttc ccctttatga 2100  
 ttttttaagg ctgtcttaca agcctaacag tgtactaagt cattaaaaga tatattttaa 2160  
 gtaaaaaa 2167

<210> 66

<211> 1388

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24142

<400> 66

gtgcttttta accaaataaa agaagaacca gctcttgga tatgtgactc tgcctctgta 60  
 taaagtgact ggaattttgt taaaaccgtg tttccacttc tgaaccctgt taccattccc 120  
 cctcacaaat cccacccaa cacctggatt ttaaagatcc tccagtgtca agggaagcca 180  
 cagagtctat taaagaggca gttctgaacc aattaatttt tgtccttata atttagagca 240  
 ttaaatagct aatatattta atggcactaa ttgttggtca cggctttcat catactttta 300  
 aacagaatcc aaagtattca aaggaaagta agcgaagtta tccaaagcca actttgtttc 360  
 aggtgtgtcc cctgccccaa atagatttta gggcagaaat agaaaactga gtttacacag 420  
 aactattttt ggaaaagctg cactggagta gatggattct tcttcagcat acttttttgt 480  
 ttgtttgttt gagatggagt ctgtctttgt caccaggct ggagtgcagt ggtgtgatct 540  
 ccactcactg caacctccac ctcccagctt caagtgattc tctgcctca acctccaag 600  
 tagcttggat tacaggcgtg cgccaccaca gctggctaatt atttgtattg ttagtagaga 660  
 cagggtttca ccatgttgtc caggcttgtc gaacttctga cctcacgtga tccacctgcc 720  
 tcagcctccc aaagtgctag attataggcg tgaaccactg cgcccgcca gcatgcattt 780  
 ttaaagtggc ttagatttag ttttaaatat ttgggggtga aaggcaggaa cagttctgtt 840  
 tttgacatac aggttttctt tgggattgtt ttcattttca agtatagatt catgtcagaa 900  
 tggccaactt aacgtgggtt tctgtattcc ctggtgttgc tcttaacctg aactcataat 960  
 cagttgccat actgaggcaa gagcactcag ggtgaacata gtcaagttac tttaaaagt 1020  
 ataaaagtgt tttccatgg tgaaccttc agtatttggc tgaatgtaaa gtatgttgaa 1080  
 gtggtatatt gatggtaagt tgtaatacac taacctgtt tgcacttttg tacaccactg 1140  
 cttgcactag gatcttggtg tgaattttca attgttttac agtgtataca gattattaag 1200  
 gataatttat ataaagatgt ttctgtttaa ctttgtgtgt tttacaacaa agagctataa 1260  
 tagatggta aacgtttttg aattgtgtt atatgttagt ttgattatgt tctattatct 1320  
 tttcacctgc catgaatttg agtgtagga agggaaaaat aaaatactaa tctggtcttg 1380  
 aagaaaaa 1388

<210> 67

<211> 2357

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24157

<400> 67

```
aaaaaaaaa atacttgtct gaagatgtat gcaagctaaa attagtttat acttcctgta 60
ttctgggaac attcagtttc atggtatctc ttaatttcaa gtgtaatfff acttacaata 120
aaatactcat tttctttgat accattctta ttttgtatff tataattatt ttcagttact 180
aatggaaaat atgacctatg tgccataatt taatattata tttctactff ctaatgttaa 240
gaacttaaac atatctaaat ctaaattctat ctatctatct atctatctat ctatctatct 300
atctattaga tatctgtcta tgtaattctag ctatctgggc atatattatt tgccttgaca 360
ttgtttcaga aaaggacaaa attaatgtff agaagttffg accigggctc tatatggagg 420
caccttcaga taatttaatt aaattagata acatgtacta aatctatact gaggctagtt 480
taacaactaa attgttctaa aactacattc tcatgtctcc atttgcttta cttgttcttc 540
agattttatag cttgactaca tttactagtt aatcctttct aattatatgt ttgtgtttat 600
catgtagcgc atggtagaaa gaaagcaagt aaaagaaaaa gcaaaaaata acatcagtaa 660
tactttaaat gcatacagta gtaataaaaa agattttatt gttaacttca cgtcataggt 720
tagcagaata gactctggag gtatagggtt ggatttgat tttatcactt actaaattga 780
tgaccttatt tacgttatat attacttatt gtaaaagaaa tgtaattcgg aaaactaaat 840
agcataatta aattcgggat ggcagcagga tagaatactg ttaaataact gcactgcaac 900
aatttagtga atctcacaag atctttataa tcccttttcc aagaaaaact gccatttaat 960
aaatgttata catgatttta ttaataaaat aaaaactgaa ggaaagataa cctaaatcta 1020
ttttttttaa caccagcaat ctgtaacatc cctagaaaat tgtctagaac acagcattcc 1080
taccttataa cgaaactgta tctcttgcaa gcaacaagaa atttctgtff ataattttct 1140
aattcctagg gctcagaaca ttgcttatta tagagatatg caaaaaagta tttgttggtt 1200
aatgaacagt cacttaataa ctgctatcct ctgcagctct catgaaatca cataataaga 1260
ccatgattgt tcttatgtcc aagtcaatac ttcattggtc taactgcacg agcttgctctg 1320
caggggattt ctggagggtt gggggcttgt ttcattgtat ttcaataacc aatttatcac 1380
ttgttggtct actctggaac cctgttttct tggctatgtt gtgtttgcta tatgtgtgac 1440
acaaagatgt cactgcttta ctaagcatgg cagttttaat gatgactgtc actctgaact 1500
tagggcaatg gtgtaagtct tcctgtttta ttttgctttg tttgttttc tttgtttgt 1560
ttgtttgttt gttgttttg cttcctctgt agcctaggct ggagtgcagt ggcacgatct 1620
cggctggctt gctgcgacct ctgcctcccg ggtcaagca attctgcctc agcctcccaa 1680
gtagctggga ttacaggcac ctatcaccac accagctaa tttatttttt atttttatff 1740
tttattttta ttttttttt agtgggggca gggtttctact gtgttgcca ggctggtttc 1800
gaactcctga cctcagggtga tccacccgcc tcggcctctc agagtgtctga gattaaaggc 1860
gtgagccact gcacctggcc tttttgttgt ttttatgtca tttcttgtg cacttaatta 1920
atacatagtt tagttaaact gaattaaatt atctaaaact ggttaaggta attacctttt 1980
ccataacttc taacagcaca accacacca atctgtaact tttagcattg gttgaatgaa 2040
aaatttagaa taatgcatgg ccaggcatgg tggctcatgc ctgtaatccc agcactttgg 2100
gaggcagagg cgggtggatc acttgaggtc agttgttaag agatcagctt ggccaacaca 2160
gtgaaaaccc atctccatta aaatacaaaa caaaacaaaa caaaaattag ccaggcatgc 2220
tggcatactt gtgtgccag ctacttgga ggctgaggca ggaggatcgc ttgaacccgg 2280
gaagcaaagg ttgcatgag ccaagatctg cactgcaca ccagcctggg tgacagagca 2340
agactacatc tcaaaaa
```

<210> 68  
<211> 1522  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nbla24230

<400> 68

```
tttgggcttt tgttgggcac tgtgtgtctc ccatgttccc catttgtctg ccaccaata 60
agcatggtgt cgagggctga agtagaaatc agaggctaga atctgaaagc ttcattaggg 120
ttctgctttt tgcagattag ggactttggc ccttagtgag ctgaggatct tggtttcctc 180
ccagtgtgcg gtttcaggga tgcggccac atgatgtgcc tgttgtggag gagggctggg 240
tcgccagtgt gacaggagac agcagatccc ttttgtgaaa ggagaactgg tactttgcgt 300
gatgttaaac ttcacaaacc gctgctcaga aatctgctat tttccttctc ttttaggact 360
ttatggacag cagcctgcta accaagtcat cattcgagag cgctatcgag acaacgacag 420
cgacctggca ctgggcatgc tggcaggagc agccacgggc atggccttag ggtctctatt 480
ttgggtcttc taggggcctc aaggctctga tgtgcatagc ttctgataac cctgtgtgca 540
ataatatgat ttgcagggca tttctgtttg tgacaaaagt ttttaataat agttttaatc 600
attcctttga aagtagtgat gtcataattg tactaatcca cataagtacc acagagaagg 660
gtttgaactg tgctattttg ttcaaatgtt gactctccgg gggcactggc tcattccaag 720
actgttcttg tgcaactctc agaatacctt atttgagcat acctgttttg aaaggcattt 780
tctttttaga gttagggtga gtgcttaagg gttaatttat tttcatgta tgccagtaat 840
atagtgttgt atgcctattg agtgattgtg gcaagaaaag ctacagcttc tttgcgttta 900
actttttcaa accacagacc agaactgggt gcatgttact ttaggagttg tgggttggtg 960
agctcccagg tacttcccga ggctatggtg tgagagcccc cgctctgccc tctggggctc 1020
cacaggcccc tggcaaggcc gatggctcag gatgatgggg cacagcccgc ctttgaacaa 1080
tcatgcttca gaaatctgcc tgaccctagc tgctgctgct gctcacttta ttcttgatg 1140
gctttggtag gcatacttgg agaacatata ccacattagg aattgattta agcctgagag 1200
tttgagggtt ttaatccttt aaaacttggg gaagctggct gggcgcggtg gctcacgcct 1260
gtaatcccag cactttgaga gaccgaggcg ggcggatcac gaggtcagga gatcgagacc 1320
atcctggcta acacggtgaa accccatctc tactaaaaat acaaaaaatt agctgggcgt 1380
ggtggcaggc gcctgtggtc ccagctactc gggaggctga ggcaggagaa tagtgtgaac 1440
ccgggaggcg gagcttgagc tgagccaaga tagtgccact gcacttcagc ctgggtgaca 1500
gagtgagact ctgtctcaaa aa 1522
```

<210> 69  
<211> 2098  
<212> DNA  
<213> Homo sapiens

<220>

&lt;223&gt; nbla20541

&lt;400&gt; 69

aaaaaagtaa gcaaaccaat acctggtgaa tctatggaca gtcatacaca tacatcaggg 60  
gaaaatgtgt gtgtacaacc caaatTTaca gtatgattgt cattcTTtga cTTtgtTTt 120  
tatagcctga ctctgttgaa catgaaatta ttagtactct aggtTTtTga cagcttgagt 180  
tcatttgaat tccttcctta ggaataagtt tttatataca ctgctaaatg tgtgatgaga 240  
atcataaaac actaaccagc tgaggtagct gtgattcact ttccccccac cctaacttga 300  
gataaaatga aggactaggc aagtatttca tgttTgtTga gtggacttcg gttccttcag 360  
tattgtctag gttattgagt cTTtctTtgc ctaatagtgg attcccactc ttaagataac 420  
TTTTattagt gataaatcag tttagggtat attctgtatg acaggcataa aatgttaagg 480  
gtgaatgctg gcctTTtTcca agaaaaggcc accttaactt gtatgaggaa aaaatcctaa 540  
ctattctctt tTTtTgtatc tTTtTTtccg taactgtttt gattgtatat tTTaaagaaa 600  
ccacttaatt tTgtatgcac gtaatatttT tTgtgaacctg agaatatgtc acaataggaa 660  
aaagcagaaa ttatacttag gggacatgtt aggggggtaa aaatatttaa gcctcgaatg 720  
ttttactgtc atctccacta actattTTta cagaaaaagc taaaaactct gttgtaatta 780  
ttgtaagttt acttattttat actTTttaaT taggctTTtTc atacttaaTt tTTtTtgaca 840  
tttgcTTtTta atatttTgtt cTTaatgtTg aaattgtTga tTTtaataat caaattatta 900  
ggataataga tatattTTta aacattcacc tcattaacaa atagatcttt gaattTTtat 960  
taggtTTtTtT ggctccagac aactgtTTtag cTTtaatgat atttctaaTt tcccagtgac 1020  
ttattaataa aaacaggaaa aatatttagg taatgtcata aaatttattt taccttTctc 1080  
atttTctgag aaaataaatg aaaaaaaccc tagatattgc tttattacca acagtgtTga 1140  
ggTTtTtTgta catatggaaa tttgacacaa aaaaataggg aatttTgata gagaagtTtTc 1200  
cctcttataa aaggactccc atttgattgt tcgaaactat aaaatgcact tttactttac 1260  
catatctgaa atgacaaaat atcgcccttt ggaaaacctg actcTTtTgca cgtgtaattc 1320  
ccagagtcta cctcagttaa ccaggcttag tTTtaggcag gaatgaattg aattaaattc 1380  
agttcatcat ctatgcagat ttgttTcttt taagcacatc cttccctcct gctgttgccc 1440  
tcctcccatT aactTTtTctt tTTaatctTg aaattgtTta aaatattcca tcttTctTtTc 1500  
tctagcaaag tgttTgtatt ccaaataagg cctctgtgaa atgtctgaat tactTTtTccc 1560  
gtcTTtTgTta tggTcagctt cattattTgg atgtattTgca ttcaaagcag cagttccaaa 1620  
cataacacac atctattTtTc ttagagtTtt gtaaatacag actaacctga tgacattaaa 1680  
aattgtggat cctacatgtt cctatgtTca ttctctaaaa acctgagtaa cTTtatgaaa 1740  
acacacaaac ctggaaaaac atcacatttt tTtcacattt ttactgacaa atgtatattc 1800  
atatgatgtt acggcagcag ggagtggccc ccagttaaaca tggctgtgag tggacacagt 1860  
gtctcgcagg atcactgcat gttatgatgg cttgtaagtT cgttTgTtaag actTTtTgtt 1920  
cagtgtTtTgt ctcccagtat ttgaacctaa tTTaaagaaa aagacgtTtTc caagtTgtat 1980  
ttattaaatg tgtTtTtTcct tacctTTtTgt gctgctactt tgctaactcTc attagcttag 2040  
ctgtgtTtTgt gcataggTta tatttggtaa taaattTata gagtgtTggt tgtaaaaa 2098

&lt;210&gt; 70

&lt;211&gt; 1332

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla20555

&lt;400&gt; 70

tggaacgac aggaattgcc ctctgcagta aatgacgtt attgctgaca ggcaagggga 60  
aacatctcgc ccaccatact ggcaaccaca ggcctactgg ctattaagta tgtgcgttcc 120  
gtggtcagct ggtcctggtt tctgttttct ggggacttca tagctgttag cccatgggca 180  
gttgatgtcc ccagictgag tttgttttac ttcctgtgta aagagtagtc cctctatatt 240  
aataccatga tgatgtttgt actcattacc catcccctag cacacactct ctccctttca 300  
gtcacttagc aagcactcaa taagttcagc aaatatttgc tgggtaccta ttgtgtgtg 360  
catacttttg tagggacaag gtatgcagtg attaataaaa tagagaattt ccagtattgt 420  
gttgatga aaacaaaact gatgtggtgg ggccagcata ctgagaggcc gaggtgggag 480  
ggtcgcttga ggcaaggaga ccagcctggg caacaaagt agacctcatc tctacaaaaa 540  
aaaaaaaaa ttaaaaattg gccatgagtg gtggcatgct agttgggagc ctgaccagg 600  
gggttctactg gagcccagtt caaggctgca gggagctatg atggtgccac tgcactccag 660  
cctgggtgac agagtgagac cccatctcca aacaaaaaac aacctaggct gggccgggag 720  
cgggggctca cacctgtaat ccagcgtt tgggagctg aggtgggtgg aacacttcag 780  
atcaggagta cgagaccatc ctggccaacg tgctgaaaca ctctctctac taaaaataca 840  
acaacagccg ggcgcagtg ctcatgcctg taatcccagc actttgggaa gccgaggcgg 900  
gcgatcacg aggtcaggag atcgagacca tctgactaa cccggtgaaa ccccgctct 960  
actaaaaata caaaaaaatt agccgggtgt ggtggcgggc gcctgtggcc ccagctgctt 1020  
gggaggctga ggcaggagaa tggcgtgagc cattcgggag gtggagcttg ctgtgagccg 1080  
ggatcgccc actgcactcc aaaatccagc ctgggcgaca gagcaagact ctgtatcaaa 1140  
aaaacaaaca aacaaaacaa caacaacaac aacaaaatta gtagacgtg gtggtgcatg 1200  
ctttagtacc tagctgcttg ggaggctgag gcaggagaat cacttgaacc tggagggtga 1260  
ggttcagtg agatggagggt gcagtggcac tgcacactcc agcctgggtg acagagcaag 1320  
actccaaaaa aa 1332

&lt;210&gt; 71

&lt;211&gt; 2014

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla20645

&lt;400&gt; 71

gtgcagacac acatgcaaga tacctgtgag gctgagcctc aagggggtct ccaggtacct 60  
agatgacagt tgcgtgactt ggcacagcgc tgaatatgga ggcaaagccc tgggttgact 120  
gagaacacca aaggccittg cagctgttgc ctcaactact ctcatcccct tgttttctgg 180  
tgctggcctt ccttgagct tcttaactgg aattttattt ctgatgacca ctggccagc 240  
tgcaccattg atcatataca ggctcccttg ctatatgat cgtgtcacct ccaagaaagg 300  
ggccgggcag cagggcactg gggatatgtt ttagagcgta gcctttggtg tggggtggca 360  
ctaagggaac acaaaagtgt tgttgaggat gtatcccacc atggatcatg tcatcccata 420  
gggttcaggt tcaagacagc tcaagagcgg gtcctccctc cctcccactc tcaaggggat 480  
ttaagataca ggtgttcgtc ccggtgcctt gcattttgca aatagaaagc tcaggctgga 540

ctctgcacgg gagcaggagg agtgcacaga gaagtttgag agcctgggtc tcttctagca 600  
 tcatggtttc atgccatgtt cttcaaaacc cacggagaag gttctgcatg ttgccccta 660  
 gtgtcacttt ttaaacttaa ttaactatt gtagaaactg ttaggaaaac cgccttgct 720  
 gtcaaccttt cactcatgtg ggtggcagaa aggagctttt gagtgtggtc ttggccaaat 780  
 gggaacccct tgggggccac cgggtgcttg cttcaggctg ctgggtagtt ttgtgctgat 840  
 ctcaggctgc tgctgtgca tctgccttgt cgcagtgggt caagaactgg gaggaaactg 900  
 ctctcctttg ctttctttat gcatgtaaca ggattttctc aacactgtgt caccaaagca 960  
 aaacacagaa ataatttggg ggctaaggct gtaactagcc ttcataacct tatctgtaaa 1020  
 actttgattc actcagtctc atttttggct ttttattggg tcaaagatac acattttaac 1080  
 tcataaagga agagtatact aataacccat tactgctatc cgtttgacgt attgagatcc 1140  
 acaagagatt taatttcgag agggagagga agggttctgc tgctaagtcg aaaaatcaaa 1200  
 gaagttagaa aaacactgat ctaccgagta gagcactgtg ctcaggatta aagacctgga 1260  
 ttctcaccta gttttgccag ggaccagctg tgtgatctta ggcaaatcac atcacttctc 1320  
 tgggtctgta aaatggggag gttgaactgg taagatcttt ttacacttga aattctataa 1380  
 atgtttctaa ctccatttcc ttcttacttg acttttccag cagcacttta tcctttaaaag 1440  
 atctgtggtc atcactgacc tcagagccct tgcctctaga ttatcttacc ctgaaatact 1500  
 taggttttaa ctctgtggat ctggaacact tcaagagcca gattgtttga aactttaatg 1560  
 gggataacc ctgcttcagc ttaacattat tttcaaacca acaaacatgt cccgcaaaac 1620  
 catatattta aatgacatga catctgtgtg ggctggagtg ttttcccg ctcagcggca 1680  
 gccatactac tacaccagtc cagatctgtt tgcagagctg ccgtgttggt cagtccagag 1740  
 gtgctgtgc tgttgattc tgcattggagg tagtcaacaa gacagccctg ctttaattatg 1800  
 aaatgtctgt agcacctgt gtacgaaggt gtatagaagt gtatagaaag cacccaaaag 1860  
 agcagcagct tggctgggag tgggtggctca cacctgtaat ctcagcactt tgggaggcca 1920  
  
 aggtgggagg atcacttgag gtggacggat cacctgaggt caggagtctg agaccagcct 1980  
 ggccaacatg gtgaaacccc gtctctacta aaaa 2014

&lt;210&gt; 72

&lt;211&gt; 1753

&lt;212&gt; DNA

&lt;213&gt; homo sapiens

&lt;220&gt;

&lt;223&gt; nbla20713

&lt;400&gt; 72

ttcagaagcc ttggaggaga ggcaactgtg agctggaggc cgagagcctc tggccgagag 60  
 gccaggccg aaacagaggc tccttcgccc tatttttcct agatgtggat ctaggattgc 120  
 taatgaaaac agagaaacca gacttagcgc cgactccagc tcccgcctt acatctggag 180  
 taagagaaaa ggcccccg cctccataa acgactcgaa aacgggagggt tgtttataaa 240  
 cttgtggatc cggttgttga ggcgtgcagc gccgaggcct ccccgccggc tagggtagcg 300  
 ctaaccttgg tagcttctct gcaggggctg ggactcccc atcgatctct ttcctctctg 360  
 gttcactgtc tcctccggcg caggaagctc cgggttggtg tggaaccagg tatcctctct 420  
 gaatttctct ttccactttt ctgcccctcg ctttctctgt gtccagaacg aaatcttgaa 480  
 aagcacagtg agcagcaacg acaagaaaac caaaggccgg acgggtggc cgcagcacgt 540

ctgggccctg gagctcaagc agtgaggagg aggagaagga ggaggaggag agcgcgagtg 600  
 agcagggggcc aaggcgccag atgcagaccc aggactccgg aaaagccgtc cgcgctccgc 660  
 tctgaggact ccttgcatth ggaatcatcc ggthttatth tgtgcaatth ccttcccctc 720  
 tctttgaccc cctttgaggc atctgctccc cgtctccccc tccaaaaaaa agtggatatt 780  
 tgaagaaaag cattccatat tttaatatga agaggacact cccgtgtggt aagggatccc 840  
 gtctgtctcat agattctgtg tgcgtgaatg ttccctcttg gctgtgtaga caccagcgtt 900  
 gcccccgcc aacctactca accccttcca gataaagaca gtgggcacta gtgcgtttgt 960  
 gaagtgtatc tttaatactt ggccctttgga tataaatatt cctgggtatt ataaagtttt 1020  
 atttcaaagc agaaaacagg gccgctaaca tttccgttgg ggtcgggtatc tagtgctatc 1080  
 cattcatctg tggctgttcc ctctttgaag atgtttccaa cagccacttg ttttgtgcac 1140  
 ttccgtcctc taaaactaaa tggaaattta ttaatatga aggtgtaaac gttgtaagta 1200  
 ttcaataaac cactgtgttt tttttttaca aaaaccttaa tcttttaatg gctgatacct 1260  
 caaaagagtt ttgaaaacaa agctgttata ctgtttttcg taatatthaa aatattcaga 1320  
 agtaactaa attatcatga ttgcctctaa ctttatthta aagactcagt ggttccaacc 1380  
 agtcaccctg acctgcggcc tacgcaggag gaggagggtc tcttaaagag aagtgtcctt 1440  
 gttacaaatc ctgcaaatgg tctggggttt gtcgggtgtg tgtctccttc cctcttcccc 1500  
 cagctggaga acgctgagta gtctctagaa ggaagatctg ggctggagaa cccagtccgg 1560  
 cagttcgtc agaaggtgta aagggtctct tgccttctg aagtcaatca gaagccattt 1620  
 cttgaggccg tcagtttttg tttggagagt gtttctggtg gaggagtgtg gaggagaacc 1680  
 ccggcattat tgctgcaacg ggaactagtc tgggggtttt aattcaaact atggggcctt 1740  
 catccaagaa aaa 1753

<210> 73

<211> 1769

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24250

<400> 73

ggggaggatt tttgaaattt tatctctaaa aacagttttc caattcagag tttttaaacc 60  
 ccttttaaaa atatagtttag ttttcagtgg tttcttttac ttttagtgtt ttacacttg 120  
 gaagtcagat atctaaaaat agggaaatgtt cttttgctat ttttagatct ctactaaaat 180  
 gtaatctgta gtgttttctt gtttcagagc atatctttaa agattcagac aagtggcatt 240  
 tggggaccctc ttccccatcc actggctttc actcaaagga aaataagact tcttggttct 300  
 ggcagatact gtctctggca gaattggctc cactgttttc cttggggagc attttaggta 360  
 gtatgttgaa agacagatat acatcagttg aagacaggat cagatgctat ctgggtaata 420  
 aagcttatga tcaggggaagg ggcaaagaag acagatacca ctaccatttt gttctttctg 480  
 gttttactaa tatgaccata atgagtcatt ttttatgcat ataggctatg tgtttcaggt 540  
 tgcctttcct tttcctccta cagatctatt gagctttgtg ttctaaacaa gatagtgtgc 600  
 ttatctgaat gtttcccatc tgtctttgat gaaaaagctc ccagttaaac taatttggat 660  
 ttattttttt ttctgtctta ttccagttct ctgctatgtg tgggcaagtg cctgttttat 720  
 cttgaggggt agatttttagc atttgaactc tctccctttt taaaatcacc ttgttactta 780  
 cagatcatct cagtccagta acttttcttt ataaaggta aaagattgtt tgctttcttc 840



tcaggtagtc tcagtggtct cagccttgag agggaaaggg acatacttaa tattttcttg 900  
 tcttgcttgc taagagctgt ttttccttcg tcatgtgttg ggcagggcta gccacccatc 960  
 tgttgaccac gctacttcat aaaactttca aaggatgata gtaggtgaaa tgaaattgac 1020  
 aagagtgttg gatgcaggta gaatgaaggg tctgctgtag cgtgtatgtg gacttctttc 1080  
 ttttgtttat gttcgtaaaa gtggagagac tctggatata gaaagggtaa tagcaaactg 1140  
 atatctccag tacctgtctc ctatatgac aaaaacatta acaatgtgtt ggttttgtaa 1200  
 aattgctact gttttgttct gaagtgtgtg agccattagc tggattgtaa cagtaatatg 1260  
 acagctgtat agtaaaatac tgtctctctt tatgatagga aatgaaaaag catctgttat 1320  
 gaagcctcag tgaactaaaa gccattctct gaaaagtcaa gacttttggg ctttatcagt 1380  
 agataaacat gagccatagg ttttctagca atagaatatt ttaacctata tgaatatatg 1440  
 ctttataggt gagactgcta tttaatgaga gttttaaaagt aactaaacct tgttgacaga 1500  
 attcaggatg gaaagtttta ccctaaataa aacttcagga tattgaatat gatagcaaag 1560  
 ttccagggtg tgttttatat ttatgaacaa ttttcatttg aatatttggg gcttgggggt 1620  
 tttggtgaga catgttcatg tatgttatat acaaaacttc aggctggca tgggtgctca 1680  
 cacctgtaat cccaacactt caggaggctg aggcaggagg atcgcttaag cccaagagtt 1740  
 caagacccat ctctacaaaa aattaaaaa 1769

<210> 74

<211> 1819

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24254

<400> 74

agctaaactt ggtgcctgaa gaagagaatg aattattgca gcttagttct tcatatacat 60  
 tgaagaatga ttatgaaacc ttaagtttat cagcattttg gatgaaggta aaggaagact 120  
 ttccattgtt aagtagaaaag agtgtcctgc tattgtacc attcacaaca actagtttgt 180  
 gtgaactagg gttttccatc ttaacgcagt taaaaacaaa ggaaagaaat gggctgaatt 240  
 gtgcagcagt tatgcgggta gcattatctt cctgtgttcc agactggaat gaacttatga 300  
 acaggcaagc acacccatca tagtaaataa aaatcttacc tagcttttgt ctttgtattt 360  
 cttattttgt agtatttttc tatgttatat ttaaattgga ctataatact gtgatacttt 420  
 tgttatgttt taatttttgt tatatttaaat aaaattattt tatgttcatt gaacaaaaat 480  
 ttaatgaatt tctgttagag gccaggaact attctagaga catttgggat acaaaagtga 540  
 acaaaacagg taattcccta gtagagtta tatcctggca aggagaaatt gacaataaac 600  
 ctaataaata aggtttataa tatttagaag ctattaagt ctatggaaag agtagtaaga 660  
 aggaaggta gggaagtact ggggaaccaa accatgaagg gttctgtaga ccattattgg 720  
 gcctctggct tttgtcagt gactagagaa cagtgaagg gttaagcga aggagagaaa 780  
 tgatctgagc taggttttaa aagacactct ggtcactatt ttaaattctt agggtaagtc 840  
 tgaattaaat gttactttcc cctcactggg catggtggct cagacctgta atccccgcac 900  
 tttggcaggc catggcagaa ggctctgttg agcccaggag ttcaagacca tctggggcaa 960  
 catagtgaaga cttattttct actaaaaata ttttaaaaat aagtcagggtg tgggtgtgca 1020  
 cacctatagt ccagctact caggaggctg tggcaggagg gtcgcttgac ctcaggagtt 1080  
 tgaagttgca gtcactatg attgcaccac tgcagtccag cctgagcaac agagtgaac 1140

cctgtctcga gaaaattaaa tgttacttcc ctaaaaaaac cttttctaac caccctaggg 1200  
 taaatccctcc attatttcctt tatttctttg ttttccttgt atataatttg taataatttt 1260  
 gattactgat tgcattctg ccacctgga gtatataatt ttaattatc tgattactgt 1320  
 tattcttcca tagtagggga ggtgatatcc atttgctga tacatagtat gtgttcaata 1380  
 cacatttgct aaagaataaa tgaatcaata atacctaa tctctaattt gcagtcattc 1440  
 ccaagagtaa ttattaaata tgtggcaaat ttctttgcct ttttactttt aaaaatctaa 1500  
 ttttgacata actgctgtaa ccatccagaa acggcatiga tgttgcttca cgttgctgat 1560  
 gcttaagcaa tgtatattgt gtaatatata atgtagtctt caaactaatt tcaacttctg 1620  
 cctttctgtg tactccctta tccactggg tgatattatt tggcatggc attgtcatta 1680  
 aaatcataca ggatagtaat tctttccat ctgctacat gcctagcctt atttaatttt 1740  
 tcagattttc tgttctattg aaggtaattg atttttctt ttttttaat gcttgaaata 1800  
 aagtgttgaa aaacaaaaa 1819

<210> 75

<211> 2512

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24327

<400> 75

atgctttaga tcaagggtta gcaaaccact gcttgtttg gccacggcct gttttgtat 60  
 agtgtgggag ctaagagtgg gtggtgtaca tttttaagg gttatgacaa cgacacagaa 120  
 taatatgaga cacaaccct atgtggccca taaaacctaa aattctactg tctagctctt 180  
 cacagagaaa gtttctgat ccccgttta gataatgggg gtgctctact actccccctt 240  
 tcatattatag tgttacataa gcctaaataa tcaactgtagc tgggtggcatc atgtttgtta 300  
 cctactaagt aggtcaaagt gattgccaga catacacatg aaggccttga attagaaagc 360  
 aaaggaactg atgatgacca atgtttaaca aaattcagac tgactttgtg cctgatcctt 420  
 caaaggctag aggtgatatt ttggtacct gaaacgtaat ttccctgata agtactctt 480  
 gcccaattat tgcattatcag ctgagatatt aatgtctgaa ttattcagct catatatctt 540  
 caagcactca actagttcat actttgaaat caattctaag agacaattct cataaacact 600  
 ttatagtctt cccattttaa aggtaaatgt tgttagggct ggaggggtaa gatgcaccct 660  
 tggtatattg tctgatctca gcagaatcaa ctacttggtg gtgtagtcca gagaaaatgg 720  
 gtcaaatcta ttaattattt taggatattg aaattcataa ttgagactcg tgacttaata 780  
 gtgaactgct catggtactt taccagctt tcaagttgta tgccttttgt aggtaggcat 840  
 ttagatggga tgcttttgaa agcataatta agaaacttta ctggaatttt gtttataatg 900  
 ggctaattgt attttctat agtttcagct gttgatgtgg gtatttacct atgttggtgc 960  
 cttgtttaat ggtctgacac tactgatatt gggtgaagtct acaaagccat tgggatgaaa 1020  
 aattgctgga aagatttgtg gccaggagct tagacatttt agtggagaat attctcatg 1080  
 tatgaaaagt aggggatgaa aatgtgggcc gggcgcggtg gctcatgcct gtaatcccag 1140  
 cactttggga ggccaagggt ggccgatcac ctggggccag gagttcgaga ccagcctggc 1200  
 taacatggtg aaacccatt tctactaaaa atagaaaaaa ttagctgggc gtggtggcgc 1260  
 acgcctgtaa tccagctac tccggaggct gaggcaggag aatcacttga gcccaagagg 1320  
 cagaggttgc agtgagcgga gatcgtgcca ttgcactcca ggttgggcaa caagagttaa 1380

actccatctc aaaataagtt tgaggttgta ttctctttaa ataagttggt gatactgctt 1440  
 cccggtttat tgaatgcta ccttagttgc tgaagacagc tcctactaac aaacagtgat 1500  
 aaaccagata aagggtggct ttatatgatg gtgcagtcac aaatctaacc agggatacct 1560  
 ttattttatg aaatctcact gtgatatgat ttgaagctag aaatgggtcc tagctctaata 1620  
 aactgcagcc tcacacagtt cattcattcc tctggagtgg ctctcaaca gcagatgcat 1680  
 ccagagatcc ttatgttttt attcattcat taggaacact gcttgggttat cttgagttgc 1740  
 cagttaata gttttttgag tgtttattcc tcccaaatca ttccattctt ttgaaaagt 1800  
 tgtatatttc ccttttcagc tctcatttca ctcttcagtg ttctgttat ttatgaacgg 1860  
 catcaggtaa tttcctaact aactgctgac ttcagaatag agcactcact ctattacatg 1920  
 ggatttacgg atgtattagt gccattttc aatgtcttac aaaaatgaga agtgtgatgg 1980  
 tttcttaagc ctttagcttg acacatagta gtggttaata agcttcttta gcaacggtaa 2040  
 taattccttt atacctctct ttcaggcaca gatagatcat tatctaggac ttgcaaataa 2100  
 gaatgttaaa gatgctatgg ctaaaatcca agcaaaaatc cctggattga agcgcaaagc 2160  
 tgaatgaaaa cgcccaaat aattagtagg agttcatctt taaaggggat attcatttga 2220  
 ttatacgggg gagggtcagg gaagaacgaa ccttgacgtt gcagtgcagt ttcacagatc 2280  
 gttgtagat ctttattttt agccatgcac tgttgtgagg aaaaattacc tgtcttgact 2340  
 gccatgtgtt catcatctta agtattgtaa gctgctatgt atggatttaa accgtaatca 2400  
 tatctttttc ctatctgagg cactggtgga ataaaaaacc tgtatatattt actttgttgc 2460  
 agatagtctt gccgcatctt ggcaagttgc agagatgggtg gagctagaaa aa 2512

<210> 76

<211> 1564

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24510

<400> 76

ttatcgatac acagcctctc tgagctggag cgtctgaagc tgcaagagac tgcttaccac 60  
 gaactcgtgg ccagacattt cctctccgaa ttcaaacctg acagagctct gcctattgac 120  
 cgtccgaaca ccttggataa gtggtttctg attttgagag gacagcagag ggctgtatca 180  
 cacaagacat ttggcattag cctggaagag gtcctgggtga acgagtttac ccgccgcaag 240  
 catcttgaac tgacagccac gatgcagggt gaagaagcca ccggtcaggc tgcgggccgt 300  
 cgtcggggaa acgtgggtgcg aagggtgttt ggccgcatcc ggcgcttttt cagtcgcagg 360  
 cggaatgagc ccaccttgcc ccgggagttc actcgccgtg ggcgtcgagg tgcagtgtct 420  
 gtggatagtc tggctgagct ggaagacgga gccctgctgc tgcagaccct gcagctttca 480  
 aaaatttcct ttccaattgg ccaacgactt ctgggatcca aaaggaagat gagtctcaat 540  
 ccgattgcga aacaaatccc ccaggttggt gaggttgct gccaatcat tgaaaaacat 600  
 ggcttaagcg cagtggggat ttttaccctt gaatactccg tgcagcgagt gcgtcagctc 660  
 cgtgaagaat ttgatcaagg tctggatgta gtctggatg acaatcagaa tgtgcatgat 720  
 gtggctgcac tcctcaagga gtttttcggt gacatgaagg attctctgct gccagatgat 780  
 ctgtacatgt cattcctcct gacagcaact ttaaagcccc aggatcagct ttctgccctg 840  
 cagttgctgg tctacctgat gccaccctac cctcctccag agagctcagt tggaaaggcc 900  
 ctcaagaggc atgctagaac gttaggtcag ctaactgaca gctgacaaac aattaatgcg 960

```

aatcatgtc acaccaaccc atagccgtgt ccacgcagca actccaccac cttaggattt 1020
ccccctccaa attattcaga ccaatggctt gccaaatggc ctctcccaa attctgtaca 1080
gttttgc tca ggtcacgcca acagggaaac ctcaagtgt ggtctaatta gtgtttcttg 1140
gatccaaagt tagaggaaaa tttagatttt attgcctgga tctgcttta agacaattgg 1200
tgtttacacc ctcttgcag caaacagct agttaggtaa ggacatatag ttccaagtag 1260
gtaaagtcac ttgattacaa atgttcttaa ctatcgtctc tgtaattcct ttatacagga 1320
cagtacaaaa ttgtgggaca tgctctggta acacacagat atgggttgca tatgatccag 1380
aattacagct gatattatgg atgacaactg ctaagggtcca taaaatgaag actgtattgt 1440
attgagggat agaaattgat catttaattg gtaacaactg ctgagctcaa agatttgtga 1500
ttgttaaaac ttctctggca tttaatcatt aataaacatc tgtattgtga cagcagcata 1560
aaaa 1564

```

&lt;210&gt; 77

&lt;211&gt; 1666

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla24554

&lt;400&gt; 77

```

aattttttat aatcctcaat tatgaaccac cttgtttata ggacaaaaaa atttaaccaa 60
ttttattgaa acgaatttca ctgtgtaaaa gttggtttga ttcaaactg tagagaagtt 120
gtagattcaa gatatatgat ttctctatgg aaataaaaaat atttgtttagt gaattgggtg 180
agtttttgatt cctctaactt ctacagaatga ttcttttagaa ttctataatt catagcaatt 240
tttgacaagt aagattgcaa aatagaaata tctataaaga ttccacagtt tgacattatg 300
gcttgctatg cagatgtgaa aatagggttaa ataatatgaa agatatggca gaatgtaaag 360
tggaagagat gacctaaaat tttagtttgt attaatagtt aaaaacattt gtgtcagatg 420
acaggggtggg cttttactgt caagacatga ataagaactg atctggctgc ctgatgagtg 480
tttccacgca gccctgcata tttagtacc aaggcatcaa ggacatcccg aaactggaaa 540
ttcatatcca tctggatga atataaact cagctggcaa atgaatgtgt ttgttgagat 600
attacagtaa taaaacactt aagaacagga agattacatt tgttggcata cgaaacctta 660
gtggctacag aagaaagttg accttgtgtc actatttatt ttatgccctg atcagactag 720
caacttagat aagtgaagtt ttttctaaca tgccttaaaa atattatggt ttgatccaaa 780
gacccacttt ttcttttagct cttgtgataa gattttcttt tttttacttt tatacaaagg 840
cagcatcttt gaattttttt ttcttttgat gttgcaactt ttgggttctt ttaaactgtg 900
atagtgtggt taactgatgc ctttcatttt gttcaactta cacaaaacaa gccagcatct 960
gatcaaaagt attacataaa atattttctt aaactattga aaggtgcttt gatgattttc 1020
tccttttggtt tgtagaatta ggactgaact tttagctcaa attgctacag ttgccatcac 1080
ctttctgttg taatactact gatatttgct tttctatata aagaaatgtt gcctaaggct 1140
gtctgggtatt tcttttcaag gttttccag tatgaatgtt aatgttgtca gtgtatgtat 1200
gaatatgaaa gtgctttgtt ttgtttgttg ctgttttttg tttatgtgtg tgtttttaat 1260
ttttttgttc ttatcagcag tcttgtgtta gcaactgggt agctttaatt gtcccttagc 1320
caatcaaaca ttaaggacta tggaggtctt tttttttttt tatttaacat gtcattgttc 1380
atctattaaa tcttgatcag gttttcaaga atgactgcag tgggttttgg aaacagactt 1440

```

atcattattg atttgagggt tcccagagat atagttcaca gttaattggt gcgctcta 1500  
 acaactgacc atttaaaatt gaacaagttt attgttttgt aacaatgtca gttgttaa 1560  
 cttgacattt caattaaaac atgaattgta gttataactc aatgcaaatt caacagttgt 1620  
 atttgaggtt aaattatitt aacaaataaa tttattta 1666

<210> 78

<211> 1374

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24604

<400> 78

attagctggt actgcagcac agacctgctt gtgtgtgcc ttccccagat ggtaggatat 60  
 aagcttgact tgagaccagc gatggtcagt aacaggcttt gaagtggcag gattgcgtta 120  
 ggtgtgctgc tgtgatctgg tgctgctttg accttgaaag caggataacg catgcactta 180  
 cttacccccg cattacttgg gtaccttaag gactagtggg tcacaactta ctttaggagc 240  
 ttttatttat tctgtaacac gtgagatctg gtaagacagt ggggggtaag gaaaacagac 300  
 aagaccatga ctcttctt cctcttcccc aaaacgtgcc tcttggaata atcttcagt 360  
 tgccctccag cagagccgaa atcaggcagg catagactcc ctctctctc atcaaaccgc 420  
 agaaatagag ttccttcac ataaccgcaa agcttctcc tcccccttgc accctgcctc 480  
 agctgcattt tcttgctgct tctacatggg agtgcttgct gttctgggaa gagtggggag 540  
 aagcgggtgg aatccttgag ccaattgaaa ctgaggtcat cttcaggaaa accatgtctt 600  
 cctgaagttg aaagattcag gcacaccata cagtcctttc ctcatgaata atcttgttct 660  
 ttactcatgg gaaattggga gaggttaacc cctcccaagt ttatgtttgc aaattcatgt 720  
 ttatgggtcc aggtgaaaaa cttttctgaa cacagcatgc tacttctctt attacctctc 780  
 tctatttaaa gaatggctag gctgagcatg gtggctcaca cctgtaatcc cagcactttg 840  
 ggaggctgac atggcaggat tgcctgagcc cagcagttca tgactaagca acatatggag 900  
 attctgtcta tataaaaaag taaaaaatta actgggtgtg gaagtgcata cgtctagtcc 960  
 caagctactt gggaggctga ggcaggagga gttggaggct gcagtgagac gtgattgtgc 1020  
 cgctgtatcc agcctgggtg acagaaaaag aagagaccct tcctttaaaa aaaaaaaaaa 1080  
 aaaaaaagcc gggcgtgggt gctcacgtct gtaatcccag cactttggga ggccaaggcg 1140  
 ggcggtacac ctgaggtcag gagttcttga gaccagcctg gccaacacgg caaaaccctg 1200  
  
 tctctactaa aatacaaaaa ttaactgggc atggtgggtgc acacctacaa tcccagctac 1260  
 tctggaggct gagacaggag aatcgcttga acccaggagg caggggttgc agttaggtag 1320  
 gatcgtagca ctgcactcca gcctgagtaa tagagtgaga ctccatctca aaaa 1374

<210> 79

<211> 2478

<212> DNA

<213> Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla21037

&lt;400&gt; 79

aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaagaagcg agggctcggg 60  
atcgacggcc gcggggcgcc gacgaggagt gcaggactca ggaagggcga gtgcgcggcg 120  
acagagcccc gggaaggagg cagggcaagg ccgggcttgg gggcaggtgg tccgggcatac 180  
cagccttgaa gatgcacaag aggaaaggac ccccgggacc cccgggcaga ggcgcgcgg 240  
ccgcccgcga gctgggcctg ctggttgacc tctccccaga tggcctgatg atccctgagg 300  
acgggggctaa cgatgaagaa ctggaggctg agttcttggc ttigtctggg ggccagcccc 360  
cagccctgga gaagctcaaa ggcaaaggct ccttgccgat ggaggccatt gagaagatgg 420  
ccagcctgtg catgagagac ccggatgagg atgaggagga ggggacggat gaggacgact 480  
tggaggctga tgatgacctg ctggcggagc taaatgaggt ccttgagag gagcagaagg 540  
cttcagagac cccacctctt gtggcccagc cgaagcctga ggcccctcat ccggggcttg 600  
agaccacctt gcaggagagg ctggcgctct atcagacagc aattgaaagc gccagacaag 660  
ctggagacag cgccaagatg cggcgctacg atcgggggct taaaacctg gaaaacctgc 720  
tcgcctccat ccgtaagggc aatgccattg acgaagcgga catcccgccg ccagtggcca 780  
taggaaaagg cccggcgctc acgcctacct acagccctgc acccaccag ccggccccta 840  
gaatcgctc agcccagag cccagggtca ccctggaggg acctcttgc accgcccag 900  
cctcatctcc aggtttggct aagccccaga tggccccagg tccctgcagc cctggccctc 960  
tggcccagtt gcagagccgc cagcgcgact acaagctggc tgccctccac gccaagcagc 1020  
aggagagata cactgtctgc gctagacact tccgcgtggc taagagcttt gatgtgtct 1080  
tggaggccct gagccggggt gagcccgtgg acctctcctg cctgccccct ccaccgacc 1140  
agctgcccc agaccaccg tcaccaccgt cgcagcctcc gacccccgt acggcgccct 1200  
ccacaacaga ggtgccccca ccccgaggga ccctgtctgga ggcgctggag cagcggtagg 1260  
agcggtagca ggtggccgca gccaggcca agagcaaggg ggaccagcgg aaagctcgaa 1320  
tgcacgagcg catcgtcaag caataccaag atgccatccg agcccacaag gctggccgag 1380  
ccgtggatgt cgctgaattg cccgtgcccc caggtaggcc ttggccctgt aggcctcgcc 1440  
ccagtaggcc ccgccccctg agggcccgcc cccagaggcc ccgcgctgg caggctgtgc 1500  
cccaagctcc tgttctcca gcctctgagc cttggcagat gctattactc cccatagcac 1560  
aggctcaggg agctgaatac aacataattc agggttttgt aaacttggtt atcagtggga 1620  
gcttgacatt ggacatgatg tgtctgact gtagaaattg gcaaaccggc tggacgaggt 1680  
ggtcatgtct gtaatcccag cactttggga ggctgagggt ggaaaatcac ttaggccag 1740  
gagttcaaga ccagcttggg caacgtggca agacccctg gctacaagaa atttaaaaat 1800  
tagcctgggtg tgggtgtgca cacctgcagt cccactctag atcatgccac tgtactccag 1860  
cctgggcaac agagcgagat cctgtctcaa aaaaaaaaaa aaattaatta attaaaaaaa 1920  
gtaaaggccc aagactctat aggtgggaga ggaatctgca tctccaccat aatggtgtga 1980  
gttggctctc atcctgacac acaataacca ggcctcgact ggccaccag gcttcccccc 2040  
aatccagggc ctggaggcca ccaagcccac ccagcagagt ctggtgggtg tcctggagac 2100  
tgccatgaag ctggccaacc aggatgaagg ccagaggat gaagaggatg aggtgcctaa 2160  
gaaggtttga gggttggggc cgggcgcagt ggctcacacc ttagtccca gcactttggg 2220  
aatccaagat gggaggatcg cttgaggcca ggagtttgag accatcctgg gccacacagt 2280  
gagacccccg tctctacaaa aaaatttttt aaaattagcc aggcattgtg ggactcacct 2340  
gtagtccctg ctacttggga gactgagggt ggaggatcac ctgaactaag gaggttcaagg 2400  
ctgcagtgag ccatggtcat gccactgtac gccagtctgg gtgacagagc aagacctcat 2460  
ctccaagaca attaaaaa 2478

<210> 80  
<211> 1337  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nb1a21161

<400> 80  
taagggaat tgtcattaat gagtcaagaa actgctcatt tatggtaaga ggaatacagc 60  
ggcgtggca gcccaacagt gctgggatat ctttttagg ttgccttagc tgcttgagtg 120  
agacaagttt ctttctgtgg tgggtggattg tggcagaaaa aaaaaaatca tgcattgactg 180  
ggagactcgc ctgcctgatt cttgagataa tatattgaga atctgttgct ttacaaatgt 240  
cacatcactg atgtagcggg cagccccctca ctctgaaaga tgaattgtac tattggaaat 300  
gcgataataa ggttgacttt tcccaacaat aggattctgc ctttgccttt agagaaaagg 360  
cctctgagga ctttctgca tttgtttgag gattctgttg aaagacttta aagtggagggt 420  
ttgtggaaaa gtgatcaata tacaaaatgc atgaattttt agcctagcaa aaccagctag 480  
ttatttatac tgtatataca gctactattt tggaaaagtg gccagaatac cttttaatat 540  
acctaattgt aatttatggg tcaataagt tactgagggt agtatggatg ggagaaaagg 600  
gtttttaaaa tttttatctt ttataacctc cagagaaatc taagtaaata tttgtttcca 660  
agtgagctgt ttttatttgt gttgttcagc attgtcttaa tgtttacttt tcacaatatt 720  
ttaatattgg tgaaattgca ctgagagttt atgttgttga tttggggcac acatacctac 780  
tctgtgtata tatgctgaac catttagaac actttaacct gtgaattcac cctcagtaca 840  
cagttcaaca gatactgtag tactattgtg actcacagga cttttatac atttgctaaa 900  
gaaattactt taaaagttaa cttaactgag tatgtttcca ccttaaggaa ttatagtttt 960  
aacatttgta cttttctatt tcatgtattt tcatttctaa tagctgaacg tattcatact 1020  
caagtctaag ggattatgca gtgtacccaa cacatattgt tttatgatgt atctgtattt 1080  
tctgaagtgt gaatatatat gtatgtttat atgtgtgtgt tcatgaaaca gcattcttga 1140  
cagaatagtt ttaattctga aaaatgtaag gttattttct ttcctaataa tttttcacia 1200  
accatttat tcttggaact tgaaaccag aaatatagct tttttttgg tctgtatgtc 1260  
tactctgcct agttctgtct cactgtcaac tctagtcaaa gattaaagat tacattgaat 1320  
ttgtatttg gtaaaaaa 1337

<210> 81  
<211> 3268  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nb1a21170

<400> 81  
atttgggtca gcagaaacgg cacgattgag cagcactgtg actataggat catggatcag 60

aggctgcttc ctctttgggtt ctgggcatca gcctcatgtc cactcaaagt aagtggcccc 120  
tctgattgga atcggagggtg cctgggtcat ctacacagagc caaacaata caattagcta 180  
ttgcaaagcc ttttgggaat tattccaggt gtaaataaac acataacat atagcaagag 240  
ccttgataaa gtccaaaaac atgcaaactt ggagtatcta agagaaaaga ccacaatgta 300  
aatgaaaaac caaataaact cgggcaaacc ataggatagg gccctgtctg tgatggcctg 360  
catatgatga gccatagaaa aaggatggtg aattctggat aataagaaat gtcaatgaga 420  
tggaagaacc acctgtttta tgtaaagctc caaataacca gatcacagtg gacagccact 480  
caaataatgc cttcataata cagagtatta ttgagaataa ctcaattcac agagagctta 540  
aggcagccaa tatttgatag cctgtcagaa aaaaacagaa cagtaattat agaaaagaat 600  
catatcctcg gaaaaacaaa aattaatcaa actaagtgtg taaagtctat cttacagaca 660  
cattgtctgg actggctcct tcaaaaatac ggttttttt taatgccaat ttgtttagtt 720  
aatgattttt gtcttattac ttcaaaactg gaaatatcct atgactcata atatcttaca 780  
acctttctac tttcttaaag aatctcaagt ttataatcac aggggatcgg attatttttc 840  
aaaaattaaa tgggtatgta atgatttctg tgtctattgt agaaaagtca acctattac 900  
agctgcaaca atggcattaa gaaatatgag taattccaat caacttgaga taatgtctaa 960  
tcaaacacaa atacaactgg taaatttcat taaatagcat ggagattaaa ttaaaacact 1020  
attatgtaat aaaaacctt agtggtacta aaattttaga atagttcaga tatacagaaa 1080  
aatttcaaag atacacagag ttcccatttt ttctctatta ctacacctc atatttgta 1140  
caactaatga atattcaata gagtattatt aactaaagc tacaattta tttagatttc 1200  
cttagttttt agctaacatt ctttttctt gttccaggat cccatccggg ccaccacatt 1260  
gaatttattt gtcattttag gtacctctg gctgtgagtt tcttagactt tccttgtttt 1320  
tggtgaccct gacagtttga gggagtacta gtcagtcagt tatttttgca gaatgcccta 1380  
aatttgagtt tggctgatgt ttttcttagg gtttgactgg gggtatgggt tttggggagg 1440  
aagaccacag aggtgaagta ccattctcac caaattatat taaaggta taccatcagc 1500  
atgccttata ctattgatgt gaactttgat tgcctggctg tggtagtggt tgctatggtt 1560  
cttactgta aagttactct tctcatcacc cacttttctg tactgtactc tttggaagaa 1620  
agtcactata tgcattccaa atttaaggag tgggaagtta tgctccacc atttgtaagc 1680  
agaaaatcta cataatttgt ttggcattct tctgcatagg aaaattatct cactctccca 1740  
gttatttatt tatttgatct tttttatat cagtatggac tcatgggtat ttcttttata 1800  
ctttgggtta taatccaata ctacacaaat aaagaaattt ttaatggaga tgcattcaaa 1860  
ttcgttgcta aaatgggcct gacacctctt gacctggct aaacagagat tctggatgga 1920  
gcaaagcact gtgacgtcat gtggactttg aaggtaaga aactacggat catcaggaca 1980  
tatttgctct tccatctcac agagaaaatg gggatatacc tctcattcc aggaacctt 2040  
cttctatat ttctaataata tccaggataa aattcaatat atatagtcag tagcttcaaa 2100  
gttaagcata atttgtttac tagaattctt aaggcagatg ttggatcatt aactcattct 2160  
cttagaaata actttggtgc ttataagtag gcatcacata atctgataca ctgatattat 2220  
atatataatc gtgaaaaaca tatcgatta tatgatata cataatctga tatatgtgat 2280  
atataatcag attatgtggt atcatataat ctgatataata aatgtttttc ataattatac 2340  
atatatttca agtataattg tgaaaaacat ttgccagttt aaagttaaat atgtagacag 2400  
aataatgcct ggaggtatag gatatataat gggaattaga gtaataaaat aatatttta 2460

agtacttact acatattact cattaacaca aaagtaactt tacgtataaa atgcatgaca 2520  
agactccatt ataaagaagt gtctgaaagc tatagggcag aaaggatat aacacagtat 2580  
agactagaag gagataaaga caatcagaag attttattca ttcatattat caacaaaaat 2640  
ttacagagta cctccaatta tcagcagctg tgctgaagat taggtatatt acctacacag 2700  
ttacaaattt tgctttcatg tagtctgcag gaagagagac attaatcaaa gaatggcact 2760



attgacactt gtgcaggaaa gggttacgtc aacaggcctg ggctgctcaa accttgcgta 2820  
 ttcccagagt ctcaagactg gtcttggcct ggctcctggg aagattactt ctgagccctt 2880  
 ggctgagata ggagtttatg ccaacagtgt gatttatggc aaacacctgt ttttgtatgc 2940  
 ctgaggcttt ggatcatgct gtaccaattt gatctgaggc ctgaagactg gtagctaagg 3000  
 tgctgcatgc ctacatgact gacctccagt aaaaaccctg gacacatgcc tcaagtgagt 3060  
 ttctgttggt ggcaacactt tacatatgtt gtcacacgtt gttgctgaga aaattaagt 3120  
 tactccatgt aatggcactg ggagaggaca actggaagct ggtgcttaat ttctcctcta 3180  
 ctccacgcta tccacctttt cgcttcgctg agttttttct gtatccttc aatgtaataa 3240  
 actttaacca tgagtataac agcaaaaa 3268

<210> 82

<211> 1304

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a21198

<400> 82

gataagcaga gctgtttcct ctggggaagg gagggaggtg gggcggggt gcggagggt 60  
 cgcgtgctg ggcacccatg gacctcagcc acggcgggccc caggagcga cctccaggag 120  
 gcctgctggg ggaacagggt cggggcatca ctggggctgg aggcgggggt gctggggccc 180  
 ccataccctt ggcctggatc aggcctcaga ggagccattc ctgtccatct gagcctgctc 240  
 tgggcctccc gggacactgc ctttccacct tgctctgcag atccagcctc catcccacca 300  
 cttctcccc gagcagcggg ccctgtctta cgaggacgca ctctacactg tcttgaccg 360  
 cctgggtcat cctgagccca accatgtgac ggaggcctct gagctgctgc gatacctgca 420  
 ggaggccttc cacgtggagc ccgaggagca ccagcagaca ctgcagcggg tcaggaggt 480  
 tgagaagcca atattttgtc tgaaggcaac agtgaaacag gccaagggca ttctgggcaa 540  
 agatgtcagt gggttcagcg acccctactg cctgctgggc attgagcagg gggtaggtgt 600  
 gccagggggc agccccgggt cccggcatcg gcagaaggct gtggtgaggc acaccatccc 660  
 cgaggaggag acccaccgca cgcaggtcat caccagaca ctcaacccc tctgggacga 720  
 gaccttcac ctggagttt aggacatcac caatgcgagc ttcatcttg acatgtggga 780

cctggacact gtggagtctg tccgacagaa gcttggggag ctacaggatc tgcattgggt 840  
 tcgcaggatc tttaaagagg cccggaagga caaaggccag gacgacttct tggggaacgt 900  
 ggttctgagg ctgcaggacc tgcgtgccc agaggaccag tggtagcccc tggaacccc 960  
 cactgagacc taccagacc gaggccagtg ccacctccag ttccaactca tccataagcg 1020  
 gagagccact tcggccagcc gctcgcagcc gagctacacc gtgcacctcc acctcctgca 1080  
 gcagcttgtg tcccacgagg taccacagca cgaggcggga agcacctcct gggacgggtc 1140  
 gctgagtcct caggctgcca ccgtctctt tctgcagcc acacagaaag gacagtttg 1200  
 ctgctgtgtc tgctgcgcac gccccctccc cggacagcac ctgccacct gaaactttct 1260  
 tagcaaaaaa attataaaaa acaaatccat tctctctta aaaa 1304

<210> 83

&lt;211&gt; 1656

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla21298

&lt;400&gt; 83

```
gatggacagt tgggccagg caaccgtatg acttccacta acttggcctt ggtgtttgga 60
tctgctctcc tgaaaaaagg aaagtttggc aagagagagt ccaggaaaac aaagctgggg 120
attgatcact atgttgcttc tgtcaatgtg gtccgtgcc aagattgataa ctgggatgtc 180
ctcttccagg tgcctcccca tattcagagg caggttgcta agcgcgtgtg gaagtccagc 240
ccggaagcac ttgattttat cagacgcagg aacttgagga agatccagag tgcacgcata 300
aagatggaag aggatgcact actttctgat ccagtggaaa cctctgctga agcccgggct 360
gctgtccttg ctcaaagcaa gccttctgat gaaggttcct ctgaggagcc agctgtgcct 420
tccggcactg cccgttccca tgacgatgag gaaggagcgg gtaaccctcc cattccggag 480
caagaccgcc cattgctccg tgtgcccggg gagaaggagg ccaaaactgg cgtcagctac 540
ttctttcctt agatgttttt ccttctataa ggtgccagac aggggaaaag ggtgggggta 600
catctgggat gtcacaggaa acattaagga gagagtgtga ggtaaagatc tgaagtaag 660
aaggagttcc acctgatgct cgggtcagga tgagaattcc aaacacactg ccagcccctt 720
cactggggat gcttggcttc ttctgctggt aaaagcagag atgtttctgt gtcatgcca 780
agctccccgg tgctaccttg ctttctctt ttaccctga tcttggcttt ctctctctct 840
ctgcagactt tcctttaatt gatgtgacat ttgtggtaaa cacctttccc agggaaacctc 900
acaaatcttg agatgcttc cttccccag atgggattgc atgatttccc tgactttcct 960
accctcctcc agagagctca gttggaaagg cctcaagag gcatgctaga acgttaggtc 1020
agcctactga cagctgacaa acaattaatg cgaaatcatg tcacaccaac ccatagccgt 1080
gtccacgcag caactccacc accttaggat ttccccctcc aaattattca gaccaatggc 1140
ttgccaatg gcctctccca aaattctgta cagttttgct caggtcacgc caacaggga 1200
acctcaagt taggtctaata tagtgtttct gggatccaaa gttagaggaa aatttagatt 1260
ttattgcctg gatctgcttt aaagacaatt ggtgtttaca cctcttgtc agcaaaacag 1320
ctagttaggt aaggacatat agttccaagt aggtaaagtc acttgattac aaatgttctt 1380
aactatcgtc tctgtaattc ctttatacag gacagtacaa aattgtggga catgctctgg 1440
taacacacag atatgggttg cataatgatc agaattacag ctgatattat ggatgacaac 1500
tgctaaggct cataaaatga agactgtatt gtattgaggg atagaaattg atcatttaat 1560
gggtaacaac tgctgagctc aaagatttgt gattgttaaa acttctctgg catttaatca 1620
ttaataaaca tctgtattgt gacagcagca taaaaa 1656
```

&lt;210&gt; 84

&lt;211&gt; 1800

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla21379

&lt;400&gt; 84

gcagctgcac cgtcctcctc cgccgccagt cgtccgccgc catggacgtg tccccccgc 60  
gccggcaggg gctgccccgc gctcgggtccc ctggcggctc cagccgcggg tcaccctccg 120  
tcagctgcag tcgacttcgg caggttcaga gcatcctgac ccagagcagc aagtctcggc 180  
cggatgggat cctctgcac ctaggaatcg atagcaggta caatgaaggc tgcagagagc 240  
tggcaaatta tcttctatct gggttgatca atcagaatac cagtgtatct gagaaaacgg 300  
gattttctga agaagtacta gatgatgtaa ttatattgat taaatcggat agcgtccatc 360  
tgtactgtaa tctgtaaac tttcgtatc tcttacctta tgtggcacat tggagaaatc 420  
tgcatttcca ctgcatgacc gaaaatgagt atgaagatga agaagccgca gaagaattta 480  
aaattaccag ctttgtggac atggttcgag actgtagtag aattggcatt ctttacagct 540  
cccaaggta cttgcagata tttgatattg ttgtgggtgga gaaatggcca attgtacagg 600  
cctttgcatc tgagggcatt ggaggggatg gattttttac catgaaatat gagttgcagg 660  
atgtgagttt gaattctatg aatgtctaca gcaagatgga tctatgtct ctggagagtt 720  
tgctttcaga tgatttgggt gcttttgaa atcagtggac tagcttcttc gctaattttg 780  
acacagaaat tcttttctg ctagaacttt cagaatctca ggccgggtgag ccattcagaa 840  
gttatttcag tcatggaatg atctctagcc atataactga aaacagccct aaccggcagc 900  
catttgttct ctttggtaat cactccacac gagaaaacct gaattgtggc aactttaact 960  
tcccttctga aggacatctg gtacgaagca ctgggtcccg cgaggagctt gccaaagcaca 1020  
tggtagccca gtgtgtctca ccaaaggac ctcttgcttg ttcgagaaca tacttttttg 1080  
gagctactca tgttccttac ttgggtgggt acagcaagct gcccaagaaa actgaacaaa 1140  
tgtaagtctt catattttat ttttctttc tcaaagtga gttactcagt tgtgactgtc 1200  
ctgtgtactt ctttttgaga tcaacagtga ttaagacatc tgcttttgct ggggtcgggtg 1260  
gcgcacactg taatcccaac attttcgaa gctgagggtg gaggatcgct tgagaccagg 1320  
aattcgagac cagcctgggc aacataagca gacctgtct ctacagaaaa taaaaatta 1380  
gccaggcata gtggtgcaca cctgtggtcc cagctactca ggaggctgag gtgggaggat 1440  
cacttaagcc tgggaggtcg agatttact gagctatatg attgcaccac tgcactcttg 1500  
gcaacagagg gagactgtgt aaaaaaaaaa gaagaagaag aagacatctg gtttatgaca 1560  
tgaacattac tgtgttgttt cccaagtctc tctcagcttg gaattcaggc cagagaacct 1620  
tgccagcttt gccatctgct cttctctcta gatttcagag acttcttacc tgcacacca 1680  
tgcatttatg atgtaactct cttgatattg ttttctatat aatgcatttt taaattaagg 1740  
gcttttctaa gaataaacca tcttgaaatc cattgggaga atcatgtgaa accccaaaaa 1800

&lt;210&gt; 85

&lt;211&gt; 2150

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla24705

&lt;400&gt; 85

agaaaaaaaa aaaaaaaca aaaaaaacta aaggaaggaa aaagctgtaa aaatcactgg 60  
cattcgtggg gccactcccc acccaagctc cagctgtgtc cgtctgtgct cctggcctct 120  
gggggaccag ctgggacatg aacttgtctg ccaggcccc gtcgctgct gaacgggtgt 180  
agttttaggt taacgcacac accccacacc taaggtgtct gcatcctcct gccaacgcat 240

gggctccaag tgggtgtgctc gctggctgtc gtgactgtca gctgtctctt gggaggggct 300  
gtggggggccc gctgggctgc ctctttccc gctagttgtg cctgagagtt gctgttgttc 360  
ctgctttccc ttcccttcct ttcattcccct gaagggttag gtgtgggttt tccgtgcccg 420  
gtatccccac acaccagca cggacaaccc ttcggcagag cccaggccgg cccctcacc 480  
cctggagtat tgaactgga gtccgtccc caaggccttc agagatgcc ctacacacc 540  
agggtccag ctctgttcct tctgggggag taaagtcaa agaggggac agcttagttt 600  
tgggcctctc gccagcaag agacagcact gctggctaca gctccaacac agccagctgt 660  
ggcaagagga ctctgcctgg gctggcccc ctctgtgtg aggtgtctgt cccttctctg 720  
ctggccagca gcagatgcac tggcagctcc caacctgtt tccgcccctc ggccctccc 780  
cagcctgttc ggcttctctg cagcccga gggggagcag acttttgaca aaggactgcg 840  
ggcctgctc aagtccctga gccccagct gaagctggga ggggaggcca ggctttgtgt 900  
ctgggcatat tcgtctgtg atggggtttg ggaagcctg gggcttgggg tttggtcggg 960  
tggtgcagct agtggcagag cgggatcaga ggtgggtggc gccagcttc tgggctgaga 1020  
caagggtctg tgcaggggtt tactgaagtg ggagtgcctt tggaatctgg gccgggagca 1080  
gaaggagca aaagctacag tgggagccag cctagggcac atgggaggcg tgagggcagt 1140  
gctgcccgtg cagtgtcagg tgtgccagt ccttggcggg ctgcagtgcg tgtgagggca 1200  
ccttctaggt gggccaggga tgcagctatg gagataaggc gggctgggga cagaaacagg 1260  
tgggcacagg gccaggaca ccagcggatg gagggcaggg tctagcccgt tgctcctgag 1320  
cgctggctgc ctgggttcga ggcggtgggt ccccgcccc ttgtgatggt gtgtaccatg 1380  
ggggagctcg gggacagggc aagcccagc atggtggggc tgcagggtgg gtctgaagcc 1440  
aggttgggtg ggggtggtca caagccctga ctgcagaggg tcaggggctc ctgcccagt 1500  
gcctgcccac ttcaattca cattgttttc aacaaggatt ttctttatct tcccctacaa 1560  
atcaagcaa gggaggggca cagaatggg aacaggacac aggatcctaa actccaagg 1620  
gactgtccac cgatgaacac tcagagtga caccatcttc cgtccacgt gtgccagga 1680  
cagctgtccc catccatgaa cacagggtaa acatctgcc ggctccgcac cagtggctcc 1740  
ctgggccatg ggacagcggc agggctcacc acggacagca cgtggcccag cagccggcca 1800  
ccctggcgtc ctggggcctc ctcccctct ctccctctca ccttgcacc tccacggagc 1860  
tgcctgtctg ggataatttg gggatttttt ttctggggga taattctttt gcatgacccc 1920  
taaagagcaa gccacaccgg tctgctagct aggtgtccgc ggtgtggtgg tggcgccgc 1980  
tggccagcgc tgcaaggggt cggctgccc cgggtctggc tggcctccc tctctctct 2040  
ttttgtgag ttctattgtc ttttcttct gagccttgta agtgtacaaa aattattctt 2100  
atattgttct gtctcgggaa actgcaaata aaagaaaaac aggacaaaaa 2150

<210> 86

<211> 1732

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21385

<400> 86

aaaacactta ctgtatgta ttgagtcatt ttgatattca cttaccctga gagtaagtt 60  
ctgtttatct atgtggaacc tgaggcttag agaacttag taactgccc aaggtccac 120  
agtttagtgac agagctagta ttcaaatgtg gagcagtctg attccaagca tcgcacctt 180

aacctttaat ttcaacatca gccttattat gcactacttt tcatatactg ggttccagct 240  
 aaactgcact ttcctttcgt atgctgttgc attgccattc ctcctctcca cactgcccct 300  
 tctcttcatt tgtttgttga atgctataag aatcttcaga ttgatcatca ttgcttgctg 360  
 aaaagtcgaa ataatagact ttgctgatac tcagtaaaag aagaatgtgc taaaattaac 420  
 aggagacaca attacctaca aatttacta gtttaggagc ttgataagc atggttcacg 480  
 ttgtaagaac atgcttctta acaagagcca aaatgttctc ttctccattt gctgattctg 540  
 ccttctctta gtttccatcg ctattgttct gggcttcaca tgtggcttga aattcacct 600  
 atcctgtatt gcagtcactt gcaggcatct cttcttcctt gttagattgt aagctctttc 660  
 aagacaatca ctttttaaaa aatcctttt gtttttctca aaacagtaga ttcttgtata 720  
 gtaggttgct aatgtttgtt aaaggatggt ttatttattc cactctgtaa gatttgagtg 780  
 aatttttcat gaaagccaaa cagatctttg ttttgagaa gagtatcttg tttctgaaga 840  
 tgccaagaaa caaatttgat cctaagagt gtcctttacg ataagtgatg tatataagat 900  
 gacttttttt ttttgagac agtttctcac tctgtcacct aggctggagt gcagtggtgc 960  
 catcagttcg ctgcagcctc gacttcccag gcccaaatga tcctcctacc ttagcctccc 1020  
 gggttaagctc ggataacagg tgtgcaccac cgtgccttgt tttgttttgt tttgtttttt 1080  
 gtggaaatgg ggtctccctt tggctctgaa ttctgggct caagcgatct tcccgccttg 1140  
 cctcccaaag ggctgggatt acagggttga gccattatac ctggccacaa tgtgacattt 1200  
 taaaattctt atacataatt agctttttat gtgttccaaa ttaaaaaata accatgattc 1260  
 taataattaa gaagtgggaa gttttgttct tgtggggaaa gtagaagtta ttattgtaga 1320  
 acctagaag tgatatttcc tggcttaata cctgtatctg attcacttcc acataaatga 1380  
 agttcaactc ttttgcccag gagttttgca tcccttgctt tggctgagaa gaggataaaa 1440  
 cctagaaaaga agtctaagca agaccgggtg tgggtggctca ctcctgtaac ccagcactt 1500  
 tgggaggcca aggtgagagg atggcttgag tccaggagtt caagaacagc ctgagcagca 1560  
 tggcaaaacc ccactctac acaaaataca aaaattagct ggacgtcgtg gtgcacacct 1620  
 gtagtcccag ctactcggga gactgaggtg gatcactcaa gcctagggaa gtggaactgt 1680  
 gattacacca ctgcactcca tcctgggcaa cagagtgaga ccctgtcaaa aa 1732

<210> 87

<211> 2482

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21416-1

<400> 87

gttccggtc cgtgcctcc ttctgttct tccgtctcc tcggcggctc ccctccccc 60  
 cccggctctc cgcgcccctt ctggcgccg gggcgccgga gccgtccgctg tgcggccctc 120  
 cttgcgttcg tgcgtgcgc cgtggcccg cgacgtccc gcgacaccga ggccgagcgg 180  
 ggcagggggc tgaccgccat gacccccag agccggcgt gagggggccg agatgcggtg 240  
 acctgccagc acctgccga gccttcgtcc gggagtccc ccatctctcc acgcatcggg 300  
 gccctgtgcc ccttgcgtct gcagccgggc accatgtcga cctcgtcctt gaggcggcag 360  
 atgaagaaca tcgtccacaa ctactcagag gcggagatca aggttcgaga ggccacgagc 420  
 aatgaccctt ggggcccctc cagctcccct atgtcagaga ttgccgacct cacctacaac 480  
 gttgtcgcct tctcggagat catgagcatg atctggaagc ggctcaatga ccatggcaag 540

```

aactggcgctc acgtttacaa ggccatgacg ctgatggagt acctcatcaa gaccggctcg 600
gagcgcgtgt cgcagcagtg caaggagaac atgtacgccg tgcagacgt gaaggacttc 660
cagtacgtgg accgcgacgg caaggaccag ggcgtgaacg tgcgtgagaa agctaagcag 720
ctggtggccc tgctgcgcga cgaggaccgg ctgcgggaag agcgggcgca cgcgtcaag 780
accaaggaaa agctggcaca gaccgccacg gcctcatcag cagctgtggg ctcaggcccc 840
cctcccaggg cggagcaggc gtggccgcag agcagcgggg aggaggagct gcagctccag 900
ctggccctgg ccatgagcaa ggaggaggcc gaccagcccc cgtcctgcgg ccccaggac 960
gacgcccagc tccagctggc ccttagtttg agccgagaag agcatgataa ggaggagcgg 1020
atccgtcgcg gggatgacct gcggtgcag atggcaatcg aggagagcaa gagggagact 1080
gggggcaagg aggagtcgtc cctcatggac cttgtgacg tcttcacggc cccagctcct 1140
gccccgacca cagacccttg ggggggcccc gacccatgg ctgctgccgt cccacggct 1200
gccccacct cggacccttg ggggggcccc cctgtccctc cagctgtga tccctgggga 1260
ggtccagccc ccacgccggc ctctggggac ccctggaggc ctgctgccc tgcaggacc 1320
tcagttgacc cttgggggtg gacccagcc cctgcagctg gggaggggccc cagcctgat 1380
ccatggggaa gttccgatgg tgggggtccc gtcagtgggc cctcagcctc cgatccctgg 1440
acaccggccc cggccttctc agatcccttg ggagggtcac ctgccaagcc cagcaccaat 1500
ggcacaacag ccgggggatt cgacacggag cccgacgagt tctctgactt tgaccgactc 1560
cgcacggcac tgccgacctc cgggagcagc gcaggagagc tggagctgct ggcaggagag 1620
gtgccggccc gaagcccttg ggcgtttgac atgagtgggg tcaggggatc tctggctgag 1680
gctgtgggca gccccccacc tgcagccaca ccaactccca cgccccccac ccggaagacg 1740
ccggagtcac tcttggggcc caatgcagcc ctctcgacc tggactcgtt ggtgagccgg 1800
ccgggcccc cgcgccttg agccaaggcc tccaaccct tctgccagg cggaggcccc 1860
gccactggcc cttccgtcac caacccttc cagcccgcc ctcccgcgac gtcaccctg 1920
aaccagctcc gtctcagtc tgtgcctccc gtccctggag cgccaccac gtacatctct 1980
ccccttggcg ggggcccttg cctgcccc atgatgccc cgggcccc ggccccaac 2040
actaatccct tctctctata atccaggcg gaagggggcc tggtccatc cggctgcccc 2100
attccggctc cctgggagat cagtgttgt agtgcattg aaatggggga tccccacccc 2160
cagtgccctt ccccttctc gggccactc aactacacc ctcttcctt cccacccac 2220
ctccccggag agaaactgga catggggcct ggggagggga gctggccaga ggaggacccc 2280
tttccgttg cattagaagg gggaggggtg gctggggccc ccaccattc cccctccctc 2340
caaaactcca acccccagtc agtgtttgag cctcctcgtt cccctcacgc acccgctcac 2400
gcaccctcgg tgaatccttg gtgatgattt tggcaacttt gggaataaat ggcaattccc 2460
acgggcttgg cactcccaaa aa 2482

```

<210> 88

<211> 1343

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21599

<400> 88

```

gtaaaaagca agcatagaga ctagagagtt gggagatgta aggaaagata ggtataatca 60
cagctaagtc atgatgaggt aactggtgac ttttttgaca tagtaggtac ttagtaagta 120

```

```

tttgattgtt aaacagaaaa tgggatatct tgaagtttgt agttgtagtc ttaggtctgt 180
ctctctatatt ctaactctta ctgtattatg atacccaaaa cagggaacca tatcacattt 240
ctttgatttt aacttgacac gtttttaaat taacagactt tatttttaga acaatttttag 300
atttatagaa taattgagca gatactacag agaatttcca tatacctcat ataccaccct 360
cattccaact caatctcccc attcatgggt ttctctgata ttaacatgca ttagtggtgt 420
aagtttgtaa cagttaatga acgaaaattg atacattgtt gttactaat gttcataaca 480
taataagggt cactatttgt gttgaacaat tctatgtatt ttgacaaatg cgtaatgtca 540
tgtatctacc attacagtat catgtggaat agtttcactg accgaaaaac caatatgtgt 600
cacctgttta tccatacccc tgtcagccac tgatctgttt cctgtctctg tagtttttgc 660
tttttccaaa atgtcatata tatagccatg tgttgcataa cgatgttaca ctcatgaca 720
attgtatata tgatgggtgt cccaaaagat tataatggag ctgaaatact cctatagatt 780
agggatgtta tagctgtcat aacatcatag catcttatag attagagatg ttatagctgt 840
cataacatca tagcatctta tagattaggg atgttatagc tgtcataaca tcatagcatc 900
ttatagatta gggatgttat agctgtcata acatcatagc atcttagtgc aatacattat 960
tcacatgttt gtagtaatac tagtataaac taacctattg tgctaccagt tgtctaaaag 1020
tatagcacat ataattgtgt acagtacata atatttgata atgataacaa atgactgtta 1080
ctgtcatata ttatttagaa tacacatttt attatttttag agtttattcc ttctacttat 1140
ttaagaaaaa cagcctcagg caggtccttc aggaaatatt ccagaaggca ttgttatcat 1200
aggagatgat cactcagtgt gtgttactgt ccctgaagac cttctagtgg gacaagatct 1260
agagggtgaa gacagtgaga ttgatgatcc tgatcctgtg taggcctagg ctaatgtgtg 1320
tgactgtgtc ttagttttta aaa 1343

```

<210> 89

<211> 1484

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21681

<400> 89

```

taggagcaat gactgttggg caggatggca gcagatgaaa gctcacagaa cactttgcgg 60
ctccagttca aggcaatgca ggagatgcag cacaaatggt tacagaagca gatggagaaa 120
aagagggaaa aagaactgag cctcaaaagc agagctgacg accaagagga gcccttgagg 180
gtttcagatg gcctcagcct tctccacgca ggggagccaa actcgaataa tagctttgag 240
aagagggtgc ttgaagatga gattgaacac cttcgaaatg agctcaggga aacggtggac 300
gagaacgggc gattgtataa gctgctgaag gaaagggaact ttgaaatcaa acacctcaaa 360
aagaaaatga ataggttact tgtgtattaa aggacccttt caaaggaaaa tgctcagact 420
tgggacacag gccagctgg ttcgttattt atttttattt acatagcgaa ttctctggca 480
tttgcttcc ctgctggaac cactcagact ggccaagatt tccaaaacag ttttctattg 540
tggaacaag tgccagagac ttggtacgct ggatcgggtt tctgtgacag gcttcagagg 600
ggcccaggtc acaagctgga gcgtattgtt tctgcctcaa agccttgagg ttgggcctga 660
gtgctgcact tcaacaaccg caaagctggg tccttcttgg accacagcac cccaactgac 720
attcagtagc ccacctttg ctgcactcag aggtccactt gtccgtgggt ttacacaaag 780
gctagggtcc tgtggtgatg tacttcctat agccagaatt agctcagcac taggtgacag 840

```

gtgagtgggt taaggaagca ggagttggtc agctttgtgg ttcagtcac ccagaatatg 900  
 ccaagccacc gagggcccag atgggagaca gagcattgct ggagacccca gaggtgaagg 960  
 ccctgaccag gctgtcagcc aagggggcca ccgacgcagg agccaagcca ccgagggcca 1020  
 gggacctgga ggggtcgggc tcaacaaatt cttgttttgc agagcaaggt gagtgaagtca 1080  
 tcagacttct cctggcctga acaaaggatt taaaacaccc cagaaagagc tgccctgacc 1140  
 cccttagaga cctaagcaca cagtacccaa aaaaggcctt taggtctcac agtgcactcg 1200  
 tgcgggggtt ttgttttacc ttctcgccaa ccagcctgat tttaatttgt tatttaatga 1260  
 acaagctctt atataacact tagcacatgc caggcactgg agcttaacaa atgccaacgc 1320  
 ctttggtttg atttatitita ctccaggcat cttttttttt tcttagttta ttagatttg 1380  
 cgtgactgtt gtaattgtaa gctttttcca gttttgtcca gatgcttgta gtcttttgaa 1440  
 agtttaatta cccaataaaa atttagcctt gtctccctca aaaa 1484

<210> 90

<211> 1479

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a21878

<400> 90

taatcattgc agttaagaga aatggaaatt agttgtgta atcttgcaga atgtttgcag 60  
 gactgactat caaactggat gatttccatt tataccctac tgtgtcagtt caagcatcaa 120  
 aataccttgc atctgagaca gacttccctac atcagggaca ggtatctgtg tgtcattata 180  
 caaaacagtt ctaggggggt gaactacata gtaaaaaaat aaaataaata gtacttagtg 240  
 taaaataatt ttataaatga tcttttgtac tttaggacat taaattgtac aacttttgta 300  
 tataataaag cttaggaact ttctgtttag caggaaggca acacattcct acacttttaa 360  
 tgtatatgtt tgttataatg tccatgtaaa catgccctat gtttgtgcct tttaattagt 420  
 ttgtctcaat aaacaaaatg tagagaaaaa tatgtagcta tgactttgtt acaactgttc 480  
 ttatccacag tacaaaaatg gtttgttttt aatatgtaga gcattatgtg tggactactg 540  
 gaaggactcg tgtggggaga gccaagaat gaccttgctg aggcctggat tgggaggcac 600  
 agtggccaca tttggaggaa gttcacattt cctggcatgc agacccaaaa ctgggttctg 660  
 gctctgcctg ctgggatctg ttatctctgg tgggctggca gtcataattc acaattcaga 720  
 cagcccaggc ttctccaca gtggtccaag gagcagtcct cagtgggggc aggtgtgggc 780  
 cctacccta agctagaatg tggttgtcag aacctgaaa gtattagttc taaaaaaaaa 840  
 aaagatatat actagaagta attgttttat caattcattg tataataaac aggagtga 900  
 cttcattgta tgacttcagt taaaatacta tttgtatgc attctttatt cacttaagaa 960  
 gcttgtctgc aataataaag ccacgtcatg tcttctttt ggaggagag agtcgatggc 1020  
 aggaggggggt tttgggtggg ccaactgaaa ggggtaccga ataggttgat tgatgaaatt 1080  
 ctgtgtcttg gaactggaat tgagtttcca tgttgatgaa ctgattcaac cagggtgtga 1140  
 aggcacgaca gccactgctc tacgaaaagg cagagtacgt tttcccttc tggttgtaac 1200  
 ctggttgaga gcttccctt tatcagattg gcagctaaac agttgtatta gataatcctt 1260  
 aaatctgaca tccagcctgt tacgctctag ggctcgtgc ttggcctgcg tttgcttttt 1320  
 attgtgtatc cgttcccctc ctacggtgtg ctctgaatg aaggtttcta tgtaagcaga 1380  
 tgatgatttt acctgtcaat accagcactg tattactaac atgcaaaaata ctgcagattt 1440



attttgaaaa ttaaagttaa ctggtcacaa atgtaaaaa

1479

&lt;210&gt; 91

&lt;211&gt; 1907

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nb1a21922

&lt;400&gt; 91

aagctggatt aattgacaag tgattttttt tccccctcgc ttcttagaaa ctcaccaagc 60  
agtgtgccta aagcaagggtg gtttagtttt ttacaaagaa ttggacatga tgtattgaag 120  
agacttgtaa atgtaataat tagcactttt gaaaaaacia aaaacctcct ttagcctttt 180  
cagatatgta tttaaattga agtcatagga catttttatt ttatggaata gattttaatc 240  
tatttactac tattaaggta gattttctat ggcatgtcca ttagctatct catgatagat 300  
gattaggggt ttctcaaaa cctgtgtgtg aggaaattgc acacagtagc aaaatttggg 360  
gaaatccata acattttcag accatgaatg aatgtttcca ttttttttct aatggaatgt 420  
gagagtttat tttattttta ttctgaagga ctttaaggaa gggatacatg attttaaaaa 480  
agcctgtaag aggtgaaata tgtgatgttt gaagtctctt tatagacttt ttatatatat 540  
tttttaaaaa cactcatcta gatgagggtc tttgagcagt tctgaaaaat gcagttccag 600  
gaaagcaact gctttgggtc ctaaggaaga aattctaaat aatgcaaact tttaaaataa 660  
gcatctaggt ttttgataat tctgtctact tacaacaaac ttgttagtac ataaccacta 720  
ttttaataat tttttctct acacaaatgt gtaatatcat atttgacttt gcttatgcag 780  
gccataagtt ccaaaagata atttcctcgc ccacaaaggc ataaacttga aaacacatga 840  
gatgaaatca acatgcttta ataggaaaag atgtatggtc tatatatgta tcaatctggg 900  
gaatcctcgt tctaataaag gttctttttc ttttctatga tacacacagc cagctgata 960  
atatgcaaat gaacattttc ctttatgtct ctccagataa tgtttattgt ctgaggtaaa 1020  
ttaaatccc accagggttt gctgtcagta ttttaacacc cacattagta tatgcgtcca 1080  
gggtcataac cccctaaaat ccatcatgca acctatttaa tctgtcttgg gattccagtt 1140  
tagtgcttgg atttatttcc tgattacact acatagaaaa gtgagacatc tgccattccc 1200  
aactctggga aaaccaacta atatacaacc atataaatga aggccatctt gatggtctca 1260  
acactaattt ttatgatgca aatttataca ctgatttttg taaaggacaa agttttaaaa 1320  
gcgtatttaa cttgatgttt tctatcagca taaataaaat ggtcatgaat agtcattaaa 1380  
aacagttgcc agtgataatc tgcatgaagg aaaaagaacc ctgcaaatgg ctattgagtt 1440  
ggaagtattg ttttgatat gtaagagata ttcagaatgc tcacactgaa aatgcctcaa 1500  
ctttttaaag tgtaagaaac caccatgagt ggtgtctaga tttctaataga agaatacatga 1560  
tacagtttgg attaatgata ttggactggg ttttaacagt gctttgtacc ggatctgctg 1620  
aagcatctgt ccagctggta tcctgtgaaa gtttgttatt ttctgagtag acattcttat 1680  
agagtattgt ctttaaaatc agattgtctc ttctatatgt aaagcatttt tatgttttct 1740  
aatttaaaaa ttaatatatt cttatagata ttgtgcaata aagctgaagt agaattgtgtg 1800  
gtttttgcaa atgctttaac agctgataaa aattttacat ttgtaaaatt aatatattgt 1860  
actggtacaa aatagtttta aatttatatt taaaaagctt ccaaaaaa 1907

<210> 92  
<211> 1402  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nbla22004-2

<400> 92  
aacatggcga tgcacaacaa gacggacacc cggcgggagc tggcggagct cgtgaagcgg 60  
aagcaggagc tggcggaaac attggcaaatt ttggagcgac agatctatgc ttttgaggga 120  
agctacctgg aagacactca gatgtatggc aatattattc gtggctggga tcggtatctg 180  
accaacaaaa aaaactccaa tagcaaaaat gatcgaagga accggaagtt taaggaagct 240  
gagcggctct tcagtaaata ctcggttacc tcagcagctg cagtaagtgc attggcagga 300  
gttcaggacc agctcattga aaagaggag ccaggaagt ggacggaaag tgacacttct 360  
ccagacttcc acaatcagga aaatgagccc agccaggagg accctgagga tctggatgga 420  
tctgtgcagg gagtgaacc tcagaaggct gcttctttta ctctcagg gagtcaccac 480  
agcagccata aaaagcgaaa gaataaaaac cggcacagcc cgtctggcat gtttgattat 540  
gactttgaga ttgatctgaa gttaaacaaa aaaccacgag ctgactatta gaagacacat 600  
tagtgcagaa gcttcaggc ttagagccc tgcttccctt ctctgacctc acaaagataa 660  
acatccttca cctgagttcg tggccatcca cctctgctct cccagaccca gtgcctgtga 720  
ctttgagtag tttgttctaa atgtggtgac aaacaagtca tttctgtaag acattgggtc 780  
ttactttatg tcattttttag taacagaact gcaggaagat caagacaatg ttgtaatccc 840  
ggcaagttgc taactgtgcg tttctccctt cttagaatga atgtctcccc caaaactggc 900  
tggcaccagc ttcactgttg atacccttca agaatgttc tctggttttg ttttatgctg 960  
aaagtagaac acaagtcaca tttcagatgg aggctgtaaa tatctggcat tttcttatat 1020  
tgttttatgt tttctgttt ttctctgttt gtttttatct tattttcttt ggggtttttt 1080  
tgtaatgcct ttgtacagct catactttcc tgctgacata tctgatcatc tctttcatgc 1140  
agttgccaat attcataact gaaaataatc tggtttatca taagtaaaat gggaaacttg 1200  
cctctgtttt ttgcaagggg aggtaaagag tgtttagtaa ttacctatct taaatctttc 1260  
tgagttgta gtagattcat gttcaaggaa caggaaaaat ggaaaaacat aagtttaaat 1320  
cagttctttt taaataactt tttattcttt tgtataaata aaatttcaca ggcttcaaat 1380  
tctcatgctt tacttttaaa aa 1402

<210> 93  
<211> 1577  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nbla22004-1

<400> 93  
gaagttggca ttaaacatca agagatacca ttattcaac atatctatca gaagggcacg 60

tccaccatca gcacaatgag atctcact caagaggatc cttttctatg caatgactta 120  
 ggagaagatt tcaactcaaca tatagcattg actcaaatg tgattaccta catgagaacg 180  
 aaacactttg taagcaaaaa gtttgggaaa atcttcagtg actggttate ctttaataca 240  
 cacaaggaaa ttcacaccaa atgtaaatca tatggaagtc atctatttga ttatgccttt 300  
 atccaaaact ctgcccttag accacacagt gtgactcaca ctagagagat aacattggaa 360  
 tgtcgtgtgt gtgggaaaac ctttagcaaa aattctaate ttaggcgaca tgagatgatt 420  
 cacactggag agaaaccaca cggatgtcat ctatgtggga aagcctttac tcattgctct 480  
 gatcttcgaa aacatgagag aactcacact ggagagaagc catatggatg tcatctatgt 540  
 gggaaagcct tcagtaaaag ttctaacctt agacgacatg agatgattca cactagagaa 600  
 aaagcacaga tatgccatct atgtgggaaa gccttcactc attgtcttga ccttagaaaa 660  
 catgagagaa ctcaacttag agataaacca tatggatgtc tcctatgtgg gaaggctttc 720  
 agtaaatgtt cttaccttag acaaatgaa agaactcaca atggagagaa accatatgaa 780  
 tgtcatctat gtggaaaagc cttctctcat tgttctcacc ttagacaaca tgagcgaagt 840  
 cacaatggag agaaaccaca tggatgtcat ctatgtggga aagcattcac tgaatcttct 900  
 gtgcttaaac gacatgagag aattcacact ggagagaaac catatgagtg ccatgtatgt 960  
 gggaaagcct tcaactgaate ttctgacctc agacgacatg agagaactca cactggagaa 1020  
 aaaccatag aatgccatct atgcggaaaa gccttcaatc actcttctgt ccttagacga 1080  
 catgagagaa ctcaacttg agagaaacca tatgaatgca atatatgtgg taaagccttc 1140  
 aatagaagtt acaactttag acttcataga agagttcaca ctggagagaa accatatgta 1200  
 tgtcctctat gtgggaaaagc ctttagtaaa ttttttaacc ttagacaaca tgagagaact 1260  
 cacactaaaa aagcaatgaa tatgtaagaa tcatcagctg tagcgtaac actaaataca 1320  
 ccaaggacaa acatactaca ggaatattat gtctgtaate agtgtggaaa agcctttatt 1380  
 tatatttacc actttgctca acctaaatga attcaaggta gagagaatcc agatgtattt 1440  
 aatgtttatg gcacaaactt cagactctag gctgaccata tacaacgtga gagaatgaaa 1500  
 ctatagatca aaggaatgtg gaggagtctt catccacagc tctgttaaat aaatgggaga 1560  
 aatcacatca cgaaaaaa 1577

<210> 94

<211> 1945

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22085

<400> 94

gtaaattatg caggtgataa catggtttgg aactgtttat tgggctcttt aactgaattt 60  
 tcaaatgaaa tgaactatgc ttattgctgg cacattgatc ccatttctgg aacatttttc 120  
 ctatttccag agttacatat gttcttttgt cattacccaa ttaacctcc ctttctctga 180  
 tatgccttgt agccaaagta ttaaaggctg atgaacatag acaagggaaa tgcatttctt 240  
 agaaatccgt gaacctcag ttgtatgctt tcagtactcg tgtaaatatg tttctatggc 300  
 aactctgagg tcagtgggtt agaaatgaga taccagtgtt aatgaaaagt gtgtgctctt 360  
 tgcttttgca tggcttggct tagtatccaa ggtatattag ggccacttga aagcatgaag 420  
 accagttata tagggaacag gtttctctca gtggcacatt ttgcttttc tgagccccaa 480  
 atacattgcc tgggcatgaa cattgttacc gtaaatgca catggatcatg gactgaatta 540

tgtgacttta aaggatgtaa ctgccaaca ttgacagatt ctgggtggc tatgtgacca 600  
 ttgtctcgt atccaaaaac cccggggcta ttggaaccct tccaacactt ttccctttgt 660  
 catagacaag ttatatata acttaccaag atgttggctg tcctgggtga ttgccagaca 720  
 gctgtctttt ggttcccat ccaaatgtgc tgctgtcctt ctttgcatth cacaatatca 780  
 aagaaaccac cacccttctt cctaacagca ttttatgcct tttattccac attaaatggg 840  
 aattgtgcct acttaggagt gccctccaa ttaattacat gtgtccaaga ataatccaag 900  
 ctagagacac aagggtggaa aacatttcaa aaaaaaaagt cctcttaagg ccagtaattt 960  
 atctgaaaag gtattttatc acaccttgac accttatata tgagcctatt aggagctgca 1020  
 ggtggtttca tagggtaaaa tccaagaaaa gagaaggatg tgtgggggtt ctattagaag 1080  
 ataattttgt tctcatttta ccttttcttt tatgatcctt ctctgctaga acaggttaat 1140  
 tctccaaatt tgttttgtt tgttttgta ttttttaggg aactctttg caaaagcaat 1200  
 ggctcgatgt aaataacatt taaagtatag tgcacataac ttccccggac tgttccaatc 1260

tgataatttg taaatgcttt agagtttttt taattaacac ttgtgttgct aaattctatt 1320  
 tatgtaatgc tgctaaagt tttagccca cttaaaactt aagacaacca tttaaaataa 1380  
 tggatgggtt actatgagca atttcgcttt cagaaccccc ttgttttagt atatgaaaaa 1440  
 gcctaatagc cattaatgag gttgaagaga ctatgagaaa tatgtatagt gtatatatta 1500  
 aaacagcttt gcttgattg tgaagattta aaaacaaact tgagattttt aacgtaacta 1560  
 ttaacacagt ttaacataa gttatccac tgggtttaag agcatctga atgtataatc 1620  
 ctttttgtaa ccaggttgg tttctacttt taccagtac ccaacatat ttatgttttt 1680  
 agttttatgt actcatttcc ctttgtttc ctcaaacagc atgatttttt tgcacatgta 1740  
 gaaatttttt aaaagaaaga aattagtaca tcattttctc tggattttct tcaattccct 1800  
 ctccctttct actaactcct tccttaaagg ccataact ccatctgcat tatttgatga 1860  
 aatgccaggg ttggttttta tttttatttt tgctatttac ctaaaaaaag aaaatgcttc 1920  
 agtcaattgc tttttatttt aaaaa 1945

<210> 95

<211> 1551

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22119

<400> 95

ttttgcacga gtaaatgat ttttttaaaa ccaataaatc atcaattatt agaaatagtt 60  
 gtctcacagt gatactggtt ttctttttgt gctgttatga tttacattg acaggaacac 120  
 tatttttaaat ccttacgttc aggtgtttgt aacttggcct tataattagg ctgaattatg 180  
 gcttcaaggt ctacaattta tgtgtatggt tcacagccta gcttctattt acatttgaaa 240  
 atacagattt ttaccaactt tggattcttt tttagttata tgtttgtctt tcctttttta 300  
 attgttcaaa actatttttt aatgggtcaag ttactaacac ttgaaaatca gatactgcac 360  
 caaatacagt gtttttccgt agtgttttta atgagtgcac ctattactac tgtgcgagaa 420  
 ttcatgtttt accagtcatt gttatattac aaacagactt gcatgattaa ccagttgtta 480

cacttacttt ttcaagttgg agtatatatg actcagtgc gactggtctc tcttatgtga 540

```

atgcacacat gcagaaatgc agagtcaatt ttacatgccc ataaagacat ttgtaaagaa 600
ttcagctctt atggctctgt gtataaatgt gtatctaggc actttggaat ttgacctcac 660
agatgttaca acttgatcag tctgttgacc taatttgtgg tagctatctg tatgttttgc 720
aatcttaata cagacatgct ttccaaaaag attaatacag aaccatcctg ccgttttggg 780
taagtctatc cagctgtgga aagggaacc tgtggtttct ctgtactggt gtttaatggg 840
ggaagaatat gaacagcttt aaagagctgt gtattgtggt tactactatt aaaaaataag 900
atctgcacga gctgactgg cctttgggtg gcctttgtgg acggctcgta gctggaaagt 960
gttgatctgg gttttctggc attcttttaa gttaaaaagt taacatcggg acatgggttt 1020
gatcttttgt tgtacctgat gacagtgcag agattctcca cagctggata aaaatgtcac 1080
aaagctactt actgtacatg ggcagtatca gatttcaa cctaataatt cagctgtgct 1140
tttaatactc aaaatattag gggatggggg gttgaagctt tccctttttt gcttttaaca 1200
atttatagaa tttaacagat gtactgtctt tcatgtggcc tcacatttaa agttatgaga 1260
acatacacat ggtttacaac ttttactata tacctttcct tggccaccaa gtattttaaa 1320
agtgtgccac cttttaacct ttactttttt taagttgaag gtgatacttt ttctatatat 1380
gatgaaactc atgtcaactg aagtgagtgt aatctcagat accaacatta ttatatatta 1440
aaatcacgct atggaaatat cacctgaatt ctgtcatttg tcagatttac agtacctttt 1500
tttctttaac ttttagcatt aaataaaaat aaaattggga gcactgaaaa a 1551

```

<210> 96

<211> 2151

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22149

<400> 96

```

aaaaaaaaa aaaaaaagaa gaagaaatct cagcaggctg agatggaact cattcttctc 60
atgaagaacg tggcaagcat tatacagagg ggccatagtc tggaaagcag gagatgctta 120
cagacatata agttgtttcc agtgttttgc tcttggtact catggttcca ctatttacat 180
caaccttttg agaaacatat ttatacactg tcttatactt ccctcctttg ctacagaatg 240
aatctacttg taacctacca aaaatttacc ctgtcacatt tccccagctg ctggttttaa 300
aataaataatc ctggatttaa agccaattgt gtctaacagg tgccaccatc caagtgagga 360
tttactgtt cacaggcatt tgagacacac cagcggccgg cggttctcac tgctcttcat 420
atggaggcaa ccatatatgg gtaagtcatt tagtctctta ggtaggcgaa ctgaggccaa 480
tctccccact tttagggtg tgaaactgtt ctgtatgata caataatggt ggatatgcgt 540
cactatacat tcttccaaat ccacagaatg tacaacacca agagtgaacc ctactgtaaa 600
ctatggactc tgagtgacaa tgatgcatca aataggttca tcagttgtaa taaatgcact 660
gctctgggtg agaagtgtga tgatggagga gacaggggta catgggaatc tccgtacctt 720
ccattcaatt ttgctaaaac tactctaaaa aataaaaatta aagaaaaaaa aaaagctccc 780
ctctttcccc agttttacga tttatttatg ctttgtgaaa tggagtctca ctcttgactc 840
ccaggctgga gtgcagtgat ctgagctcaa tgcaacctcc acctcccggg ttcaagagat 900
tctcctgctt cagcctctg agaggctggg attacaggcg catggcacca tgcccggcta 960
atttttgtat ttttagtaga gatgggggtt cactatgttg gccaggccag tctcgagctc 1020
ctgaactcaa gtgatctacc gtaccgggcc cccaatgtta gtttttaaat aaacgactat 1080

```

gtttaattca catgctaaca ggcacctaga gaatactttc aagtaaaaag attaataaac 1140  
 ccacttcgca ttgagtttagc tgggtgtttt ctgccaacca ggtgtccctg cctgggtccac 1200  
 agttgaccaa ggatccctgc atctgcctct agcaacaccc aacactgtat gaagggctga 1260  
 ggggggtctga cagttcacgt cactgacatc ctctcactgg tatttcgaat gccaagccag 1320  
 ccctcaaadc aagttcactg gcctcgactg agctgccaag tatttcatac atggggaggg 1380  
 ggggtggggg gggggagggt atggggatca cacagggtgcc aggcaatgag taagattatc 1440  
 ccagcaactt ctccatgcag agagaaatgt ctgcagctgc aacactatct ctactccagc 1500  
 ctcttagact ccatgtagtt tgcctttgtt tgaatgtttc tatttatctg aaataaccag 1560  
 aaatcatttt tattattata tattactcca gtttattaaa taaatgaaac aaggcttatg 1620  
 ccacatattc caacaatgtt taaataaaga gcttgaaata taaaggctta tgaaaacttc 1680  
 atactcttta tataatgcat actatttcta gcacatgaat aaatataaag gacaggagcc 1740  
 actttttata ttatgaatcc acaacattaa gcatcaatga ttacacaaat ccataagcac 1800  
 acaaacaaaa aaaccattg gttataaaaa ctagaattcc ttttggcata tttaagaaaa 1860  
 cccaaagggtg gggagggtact tatagccaga accctgacaa cgaggggacc aagtctccca 1920  
 attccttaag ttgtttcttg gttagaagct tcaacaattg cattaactct ttcaaaaaaa 1980  
 cagaaaaagc aggttaagat cctgttcaat aaggcactta ataagtctac actgaagaaa 2040  
 tactatgctt ttatcttaaa tctgtcttaa gttttaccat gaggtttgaa tttctttcca 2100  
 ccttggtagg aacatgtatg taatttgaat aaacttgtaa taatacaaaa a 2151

<210> 97

<211> 1790

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22161

<400> 97

gttgactacc cttcttaca caaaactgtt tcttttttat tgcaaatagg gctcttggtg 60  
 ttttttactt tttgtacat atcacagtac atggtttttc actctttagt ttatttcatt 120  
 ttattggaat taactttttt ttattctaact actgacagag tttgtaatct ctatataata 180  
 cgtaattact ccaattacag cacttttacc ttgaagagca tctcagtttt tcccacaatt 240  
 tcattgagtc atcagagact gatgttgctt cttggtttca aatttgggtc taaagaaact 300  
 ttcggctgta gaaacaaaag cacagagtga attttttaca aaagacaggg aatatagaat 360  
 agtcattaca gacacaaata accctagtag cacgaagttg gtgttttctc tgtttttact 420  
 taagattaag aagatttttg gtgactctga actctttatt tatatttcag tttaaaatat 480  
 caagactaag gggcatcagt tatctttact ctttaatat gcccataatt taataaatta 540  
 cactaattaa acgcataatt tcagcatacc agtggaaatta attttggga tcacacacat 600  
 ttaaatagtc atattgtggg aatattatag ctggtaacca gctgatattg attcttatta 660  
 taggaatgac tgtaatgata gtgggtgtag cagtagtgat attagcgggt gtgggtgatgt 720  
 gaagtaaaat aaaagtatat attatatgtt gcccaattta ttagaaatta tttgatcaat 780  
 gcttcatttc attaaaatat cataaagatg tttatagtat ttttttactt tattatttaa 840  
 atcataacta acaatatttt taaaaactta ttttcattgc tacaatgtca aatattccaa 900  
 aatcagccaa ctacagctat atatgtgtta tgtgtgacag aagtgatctt ccttccctct 960  
 ttttgagctt gacatgaaag tgaaagaaga ctcaatgaat aattatgagc tatttattta 1020

ataattactt gccttgggtg taatacagta atgaatgagt gaaacaaata ttctcattga 1080  
 atatgataca atgctgtttt ctgtatgttt catgttctat tattaaaggt atccattagg 1140  
 ccaaaattat ttaatcaaat tctttatctg ataggtagat tgagagcatt ttcttaatgc 1200  
 attaccttgt acataagtat acacttggta aagtagacga agttgaaata ttaatttcat 1260  
 ttggcattta gcatgtgaat atgattattg ttgtattgtg tctgtatatt tgtttgggtg 1320  
 cgtgctcagg tgctccact actgattaat gtgtgtgcta atatcctaaa aacacatatg 1380  
 aggtttaaga aaaaattttc ttgtctgaaa acataaacat cttataaaaa ctgattttga 1440  
 aataaaaaact aaagtacttg aagatatgtc ttgtttctaa ctatatgttg catgccatgt 1500  
 tgggtatttg ctaatgtgtt tttttgtttg ttgtttttac ccaaatccct ttggaaaatc 1560  
 taatggacaa atgcaaattc ttggactaag gactgtataa attgacctga aaatacatga 1620  
 gagttgcatt taaaaaaaaa tgcttgtaaa tccgtcttga gttttactct atgtaaaata 1680  
 tgtcttgggt ttgtgattgt atacaagatg tatcttgata acttatgtaa actgtgccgt 1740  
 ataaaggctg ttgcctcagc ctactaata aatactgaaa atatcaaaaa 1790

<210> 98

<211> 1955

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a22252

<400> 98

aatgcaaccg gtgagagtgg ggaggctaag ctgtcgatta gtcccggcac gtggatgaga 60  
 aagacaacga ggaggagca gctagagggg tggaaatggg atcacgtgac cttgagagaa 120  
 gcaggagagag agaacactgc gtctgctccc ttttagaaca gctcaatata gggaatccct 180  
 aacagaggac ttccaggata tcttagggac agcagagcct caagatccag ggaggatcct 240  
 ggatacctga gtcaccactt ggagggggaat ctccctggaag aactgattga tcagcaacat 300  
 ctacattcaa cttgagggtc ttcttgcttg gtgagcctgg tgggtggcca acagctctgg 360  
 cattgtggga cccacaccag ccaggttagc ctcccatccg ctggacatca tgggagtact 420

gagcatcagt tcctccttag tcttgcaaca ggatggaacg gttcccaggg cgttggcact 480  
 tccattggca gcagcagaag aacaaaaata ggacacacca aatggatcta atttgcctg 540  
 aacctcggtc tgcaaggatc atgatttgc atctgggcac aagcttaggg aagctctggg 600  
 aacagctcta ctcccagaaa gctgggtgaa aatcaactag acccagcagg gaagtctccg 660  
 cgttgatcag tggggccttg ctgggctgcc ctccagtc ccacagggtg tccaaggagg 720  
 ggctgaaca ccaggctctg gaaaacctga ggatgatgtt gctggagtig gtgccggggc 780  
 tcgctctagg acaggcgtgg gctcctctc tccactggtg tgcctttggg aagggtatcc 840  
 tccaccact gtgcacccac ccgacctgtg gcttgagca ggccctccct ggccagcagc 900  
 tctgcttctg ctgagtgaag aggaaggagc acttggctct ccctccagga ggtgcatgaa 960  
 gattaattag aaacttaca atccacagaa agtttgaaga agaaagtga aaaacttcct 1020  
 acccccatca cctcaagata ttactgttg gtgtgttggg ggactcctga tggacacccc 1080  
 agcttctcaa tacctgggag tgcaggcaca aaccttgacc actctgtaat gccactatca 1140  
 tgctcagttg tcctgctgta gctgaaatca tttctgcagc aacctcttg aattaccttg 1200  
 aagaagcagc ccagacagat cctctgaaca ttctctaaga atatagcggg gaatgtggtg 1260

tttccctgag ttctgtgagc tgctctagca gattaatcga accctagaag aggattgtgg 1320  
 gaagccaagt ttacagccag cagaaaaatg aaaccatcaa tgccagcgac aggggtgctga 1380  
 ccaggcggag gcagcacggg ggagcacaga ggctgggtgt ttacttagct tcttccctct 1440  
 gtactctctc caccggccc ctcagcccac cgctcttctc ttcctggggc agttccctct 1500  
 gctgagcggg ctggatggag attttccaag caggaagagg agtagagcct cggtagatta 1560  
 agttcagctg tctccttcat tgtactggct cagggtggc cgggacctc tctgctaggg 1620  
 gcttgagggtg gaggcaggac ggctcaggag gaccactga ggatcattct gcagtctctg 1680  
 caggtgctgg tcaggttctc agcgctcagg ctgcaggtag ctgggcttcc acaagggggc 1740  
 aggtgctctg cggggtgcac ccctggatca cccgtgccct ggcaataatt catgctcctg 1800  
 agataccttt ccaatcggtg tcttccagcc ttcccttgct cccaggctcc gtgtgggcag 1860  
 gagctgagtc ttcttcaact tgattctctc tgcatctagt ccagtgcttg gaacaacata 1920  
 agcaggaaat aaatattgga tgaatgaatg aaaaa 1955

<210> 99

<211> 2059

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22347

<400> 99

gatttccagg catcttaatt cttcttttgc tgtgctttca aatgggttat tttgtgggtc 60  
 tcaaatatat ttccttaaat atttggtaga tccttgaggt tagaagagaa aggaatatta 120  
 ccatcatttt attagtgtctg gtcaattctg atgggggtaa aaattaaaga agctgatatg 180  
 gtaaagacga agaaaaata aaaatatggg gagactgacc ctggctttca ttggcgtagt 240  
 tcatttctgc ctttcttctc tatagattta aataaagaca agtatttatt ttgactaaat 300  
 cacagacata taaggcattt tcgggggtag attgcagagg tagtaaaata aactatagta 360  
 tttcttggat ttgcttattt cttgtagcag tgtctatatt aatgcatctt gaattttatg 420  
 cagtgtaat actgttttagt gaaattttaa aaaggttttt taagagacat ggtcttactc 480  
 tgtcactcaa gctgttgtgc agtggcacta tcatggctca ctactgcag ctggggactc 540  
 ctgggctcaa gtgatcctcc cacctcagcc tcctgagtgg ctgggactgc aggcattgtc 600  
 cacctcacct ggctaatttt aaaatttttg tagagatggg gtctcactgt gttgttcagg 660  
 ctggtcttga actcctgtgc tcaagagatt ctcccacttt ggccctccaa agtgctggga 720  
 ttacaggtgt gagccaccac gtccagcctt aatgaataat ttttttaaat tgaaaagtca 780  
 caaaacttat tacgaacaag gtaaaagggtg tacagtttga cttagctctt tgctcaaaaa 840  
 tactgataac ataataagta gggtagcct cccagtgcc tcaaaatacc agataccgtg 900  
 ttcatcattc tctcagacat gagtgtattaa agtaagatta tttcattttt ttatgatacc 960  
 tgctgtgctc ttgaagaaga ctgtcttatt ttcacttact agtaaaagtg aaagaggaac 1020  
 attgttttaa cattttaaaa ataaaaatta ttttttaatt attgttgatt tgaaataatc 1080  
 agtttcctaa tatgttggtt caggtttcct gagatgcaag gaaataataa ttgtaccaga 1140  
 atggggggaa aaggagggaa gaaaaagggg aagagaggag aaaccagttg caatgaatta 1200  
 tagtccttai catgttactt tctgagaaat aaaatgggct tctgattcta aaaaatatac 1260  
 tgtatctgca agagtaaaag tcgtaatctt tcccatattt cctataggca aattaagtta 1320  
 ctttagtggc aaagtacatt taaaggccca tttatttctt caatcacatg atagtaaaag 1380



ttttgtcagg aggtctgctg aactgagaat acagaatcag tggcagtgac agaacatcta 1440  
 aaaaatticca gtcaccatct cctttagaca tactggtcct tgcattagtc ctaagccaa 1500  
 cataaatgat ctttaatgta aaattgtaac agtacataa agcaggctaa cgtagatatt 1560  
 gcgtatctca aagcagttgg atttaaaata agtgatagtt aacgaaatcc aatactgtaa 1620  
 tgaacttttg agaaaaaaat agttgattat gctttttaat tgtgtgtttg gggttttggc 1680  
 ttttattatt actgttaatt tggccataag ctcatatgt taatcagttt taacagtgtt 1740

tctccatttg ctggataaga atttggctga ttggccgggt gcggtgttgc atgcctgtaa 1800  
 tcccagcact ttgggagact gaggcgggtg gatcagttca gtcaggagt ttgagaccag 1860  
 tctgggcagc atgatgagac cccatctcta caaaaaatag aaaaattagc cagtgtgttg 1920  
 gcacatgcct gttgtcccag ctacttgga gtcttgaggt gagaggatca cttgagcctg 1980  
 ggaagcagag attgcagtga gccgagatca tgctactgca ctccagcctg ggcaacagag 2040  
 tgagagcctg tctcaaaaa 2059

<210> 100

<211> 1773

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22352

<400> 100

gtaaatagta gaatgtgaat ctggttttct tttgcttgca aattgccatt cttttttttt 60  
 ttcaaattta aaattacaca tgctgttttt ttctttgatg gggagaaaga actcattccc 120  
 tgagttcatt cttttttgtt gatgtcatcg gtaatcttca agacttattg aagtagagtt 180  
 gtatttgggg aagatacatt ttatattcac tttttttttt ctttctgtag tctacctctt 240  
 ttactcaaac tgtataagga aatagtgcact gattgttcag gtttggcatt ttcatgtcta 300  
 cctgcctgca gaattaatgc cctcttcctt gtctaagata ttactgtgtt aagtgtcctg 360  
 ttaattataa atagttcaaa atggacagac tgtcaacttg aaatttactt atgtaaaaag 420  
 cttaggtgat tcttagggtt tccatgttca taactttaca aagctttata aaaataaaat 480  
 tgcaacttaa tagagctaatt taacttgtat ttgtataaaa agaaaaaaga attgcagctc 540  
 gatatttgta agtttttcaa taacttcatt aaaccatatt tatgatggga gggaccagac 600  
 attctatagt aataatgtat agtgcgtgtg ataattccat ggtttcttca acatcttctc 660  
 aaccaagtaa aattaatata agatacgcaa aagatagtaa aataagaatc taattatagg 720  
 tgcaagggga ctcaggctta tgctggaaga atctgacaag tggatatagtt tgtttttcta 780  
 ggaagaattt actgatgagt cacataactt gcatgtaata ttaggttctc attttttagc 840  
 ttcgaaactg tgtccatgca aagactctat aactgttaag acttgtgtgg ttgaattttg 900  
 acttctttga tattcagcat ttagtgcata cattttgcaa ctagggaatt tgattttcta 960  
 taccacaat aatatattatg gctaacattt attaggcact tactatgtgc taggcactgt 1020  
 aagcacttta catgcataat ctcggtattc cctgtgagta cagggttaat tatttacctc 1080  
 tatttcacaa atgagataat gaagtgggat gaagtgcgag gttaagcaac ttgcttgaag 1140  
 tcataggtag taaatcgtgg ggccaatttt aaccagaca gaccactgac tccagttcat 1200  
 gcttttgctg cctcactttt ttaagtggta tttttaatta ggaagaccat gctaaagata 1260  
 ctttcaagga taaatgatta ttttctcact tcaattgttg gtttaaaatt agcataaata 1320

ggtaaaacca gcatgctcaa acaactgagct caaacattaa cattactaat aaaaaaaaaa 1380  
 aagagtgact ttaaaagttt ctttctatcc agggtttctc ttgggatact catatggtat 1440  
 attactggct tatatttcaa aattatttta ttcaacatga ttgactttgg cttttataa 1500  
 ttacataaa acataatttt cctcagttct gtaatccaga tttcccat tgagtaaata 1560  
 atacaattaa attacatat ggtaatttag acatttaata ggatattgca taggtagaat 1620  
 actttgtcag tacttagtta ctacctatat gtattttgt gttactttc agtgatttaa 1680  
 agaaatctaa cagaaatctg cttaaattg ttttaaatag tgaatcct gcttgctatg 1740  
 gaatgaataa acaggtaaatt ttgatatgaa aaa 1773

<210> 101

<211> 1641

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a22394

<400> 101

aaaaaaaaaat gattagttaa gtgcatacat tatgaaactt acagaataaa acttattata 60  
 catctctttc ttaaatattt atctttacac attttcaact ggctcccaa gtctgataag 120  
 gaaggattaa aagaaaaaag aatgtatta gttgggtggc caaggagttt cttttgtaat 180  
 gttgagagac ttccgctttc tgaatttcgc tggttctcta aggtaaaaga gttaaatagt 240  
 acccttgctt accaaggaaa gtgatccaaa ctatatactt agtgcagata tttcctttgc 300  
 attatttagt cttctctgga gagaaaatac agtttccctt tcctctttct cttcacattt 360  
 actcttttca acccaaaata agagacatag aaagcaaacc acagccagtt tggcatcttc 420  
 tcagtgttac tagtataggc acatacacat acacagtctc agcaaggta taaagaacct 480  
 tgtcagggtc acttgcaaca tggccttgct acttggttta gtccttttaa gcctgaaaat 540  
 aactttcttg gtcattggaag aactggacgc atcttttaac ttatgaaata gaagtgaac 600  
 ttgaaaactc tttttaaaaa atcctgggtt tgcaggacag ctacataatg aatgtatata 660  
 ttaagactgt agctgaattg cacatgaaat cagattgcca acttcttgac tttcaatgtt 720  
 agacatttat ctttaagttg tgagcgatat atgtagcatg ctgtgaaatg tctgttatag 780  
 ctctttaatt catcagtatt aatacagaat tatcatttgc gtttcttggg actttttatt 840  
 caatgtaatc agaagctgtg atgttttgcc tttgtagtcc tgtgctttgt tactgtaatt 900  
 tttttttttt ttacgaagc acgtgactgg actaatgtaa ggcagatgac gtgatcttta 960  
 agactgctat atatatcagt ctcttactct ataaggtttt aaattagaat aagcttttat 1020  
 caaatagata attgatgcaa tttaggattc acgcaagttt cagtgtcaaa tggcggctctt 1080  
 atagtttcaa ttctgaaaat agcaaaacta ataaacagcc actttaact tgttctggca 1140  
 aaccagacct tgctgtagat atagtctaag gtagttaacc atataagcct tttcaactct 1200  
 taatgccctc cacatgaatc agcagttaag aaggttctag aacccatgaa agcttttgta 1260  
 tgtattacta ggttttgtt ttcttatgtt tgctgatttt acagttctga ctaaagctga 1320  
 cctaaatgga tcagtttatg tgtaatatc tagtgcttta atgactctt ttttcttgg 1380  
 agggagggtg acattatttg gacagatgca gaaggaactg ttagtgagtc aagacaaaca 1440  
 catctgaaat aaaggaactg tgtattaaca tgtaacaat tcataactgc actttttatg 1500  
 acattttgaa aatctattta taggtacaga acaatgggtt ttgttaaact gtatcacatt 1560  
 tatacttgca gaaatttatt tcattgttat tagtaggaat tttattgggt caataaaatt 1620

ggcaaaactg aacaccaaaa a

1641

&lt;210&gt; 102

&lt;211&gt; 2960

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla22423

&lt;400&gt; 102

ttggggcata tcgctgcatc agagaatcca cagagcaatg caaatagaga aaaaacaaag 60  
ttagaagaag gaaatatgcc aaccacttga ctagagagga aaaagaaaat ttattcaggg 120  
aagaaagcca cagaagtgtc ctttgtgtc tttctagttc ctttaggaga ttttgtctct 180  
cacacattca tcatgtttgg gccaaagccca ctgggtgcag cgggtgcagct cgggaagcat 240  
cggggtgagc ttcaaggaca gagtttcttc cagtcctaag ttgtctgata tgtttgttca 300  
taaaactgcc ctttctctga cttttcaggc cagcaccccc agccagaaat tatcgttttc 360  
cccactcttt atattataat gacaataaga tttttcagtg ggggagcatc acatatgcaa 420  
tcagggtggca gaaaaagttc ctgcaatatg aatttagaga ttigattacc cagcacatgt 480  
ttctgtcctg tctctaacag tctctggaat ctggtagacc ttcctgaata ttttgctttg 540  
tctgatgatg actttaacat attgctgctg gtgtgcatcc gtgtgtatac tggacagcag 600  
gaaactagcc tgtgccactg cccagctcag cagcagaaca agaggctctt gatgaccgta 660  
agttaagaa atataaatat gtctgcacc acagaatata cagaacaaga ttcacccatg 720  
ctagaaatat atcataatct tgaatgtgtc ttttaagcc actgcaccaa gccataaacc 780  
tcttcttttt aagtttatgt ggtagtcagt ttctagcttc ggtcactgct aaggaagaca 840  
aaggaggata ctgtcagatt cttcctgctc aaaatgttct ccatcctggc agtatatcag 900  
agcaggtcaa caactcaaca gcttgcatct cagaactact gggcttttct aggtgccctg 960  
ctctctcccc tccccgtcc tttgttcttc aaggcttttc catgcctacc acctgaggtt 1020  
ggagccctcg ggcatttttt agttctgcca aagcacatag tcattgaaag acctgcgtga 1080  
tccccgtaac tggcaagcca caacctcttc tctcaaatga cctccttctg aaagttttca 1140  
gaggaaagag gattgaacag agagggacag atgatcacag atatcttgaa attgccaaag 1200  
ggagtagact tgttatgaaa tgctgtgagc cagacacgaa gggaaaaaac caggacagct 1260  
catttgggca gagagcaaag acaaagcctt caatcctatt caggagctga gccctgcagg 1320  
aaacccactg cctctagcca cagtggagag gtgcaggcac agtgtggtt gctactcatc 1380  
ggaggtgatg cgggggttgt ctgagaatgg agggtaggaa tgatctttat ctgagtcctt 1440

tctacctgag aacagaacag aacacacacg cacacacaca cacttttgta taaaagata 1500  
gataggaatt taattttcat aatgaaacat atcaaatctt ttgatattgt cactattatt 1560  
gcttagtggt gcacctttaa atacattcat titaattaaa aagtggatca agttaagcaa 1620  
actaaatggt agagtttata caaacagagt tgcaatgcaa ggactaaggt tcttagatct 1680  
acagagtctc tcatacttgg aagtgaagct atagatgttt tttagaggtg aatctcgctc 1740  
tgtcgcccag gctggagcac agtagcacga tctcagctca cttgcaacct ccgcttccag 1800  
ggttcaaggg actcttcaac ctacgcctcc tgagtaactg ggattacagg cactcgccac 1860  
catgcccagc taatccatgt attttagtag agatgggggt tcgcatgtt ggccaggctg 1920  
gtctcaaact cctgacttca agagatccac ctgccttggc ctcccaaagt gctgggatta 1980

cagggtgtgac ccacatgac tgacccctga agctataggt tttatgaggc tagaagttga 2040  
 ccaaggagtg gaaaacaagc attgcttaac tgaaccaaga catctgttgg ttgaccttct 2100  
 cagaaagaga ccaaaaagta tagcatttga tcaaaagata actattaata ttacaaatga 2160  
 aaagagggag agaaagaaat tataatgaac tgtaaaaaag aattgacaaa cggatagaaa 2220  
 ctggaataac atagttaggt gtgacaatgg taagagcaga gagaaagagt gagaggatat 2280  
 agagtataat gttaaccttg ttctttttta ttaagaacat cctaagcgtc ctaacattag 2340  
 acgcaacat gagggccgcc tagcaaata gtcttgagat tccagtgcac ttttatacca 2400  
 ttcttaaatt ctgtataaca agtttctggt taacacatg gctaaacaca attatttctg 2460  
 aattcctgtc actctgccac ccataatgtt taaaacaaag aggtatcctc atttactga 2520  
 tgtttaaact caggaatgag atgtgtcagt agctttggga acatgtaaag ctggaaagta 2580  
 ggaattcttt aaataaaaaac tcctagtctt tcttctgag accttgcttt cagtgtgagg 2640  
 tggctgagga ttggcatttg acttgccgtc ccagtcacc atagtggaga cctcagtcca 2700  
 ccaagaaatc aggcgaatgc tgtgtttgca atgggagaga caagatgttg agtgttttac 2760  
 ctgtattacg tcatctctcc tcaccacagc ccttgaaaca aggaatctta cctctatttt 2820  
 tctgttggtc cagaagagaa acttttttgg gagacatagc ctccctgtat caccagaag 2880  
 gcagaggtta gagttagccg agatcatgtc actgcactcc agccgaggtg acagagcaag 2940  
 actctgtctc aaaagaaaaa 2960

<210> 103

<211> 2920

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a22439

<400> 103

cttagctcct ccttttagga tgtccagatg taaaaaaaaa aaaaaaaaaa gaaaaaaaga 60  
 aaaaaaaaaa gaaaacagct gcagttcagt acaactgctc ttttcacact caactcccta 120  
 aaactccttg taacttctg taactattgg atgacgcttt ctccagctta gccctaaata 180  
 aagcacagtt taaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 240  
 aaaaaagaga agaggagaaa gagagagagc agagagcgag cggagagcga ggtgtagaga 300  
 aaccgagggg gagagaaccc gagtgtgtgt atgcgtgtgc gtgtgtgagc gcgagcgagc 360  
 gagcgagaga gaggagcgag agagtgtgag cgagaaagaa taaaaggaaa gaagattttc 420  
 tctatgtata taaagatggc cacgttagca aacggacagg ctgacaacgc aagcctcagt 480  
 accaacgggc tcggcagcag cccgggcagt gccgggcaca tgaacggatt aagccacagc 540  
 ccggggaacc cgtcgacat tccatgaag gaccacgatg ccatcaagct gttcattggg 600  
 cagatcccc gcaacctgga tgagaaggac ctcaagcccc tcttcgagga gtttgcaaaa 660  
 atctacgagc ttacggttct gaaggacagg ttacaggca tgcacaaagg ctgcgccttc 720  
 ctcactact gcgagcgtga gtcagcgctg aaggcccaga gcgcgctgca cgagcagaag 780  
 actctgcccg ggatgaaccg gccgatccag gtgaagcctg cggacagcga gagccgagga 840  
 gatagaaaac tcttcgtggg catgctcaac aagcaacagt ccgaggacga cgtgcgccgc 900  
 cttttcgagg cttttgggaa catcgaggag tgcacatcc tgcgcggggc cgacggcaac 960  
 agcaaggggt gcgcctttgt gaagtactcc tccacgccg aggcgcaggc cgccatcaac 1020  
 gcgctacag gcagccagac catgccggga gcctcgtcca gtctggtggt caagttcgcc 1080

gacaccgaca aggagcgcac gatgcggcga atgcagcaga tggctggcca gatgggcatg 1140  
 ttcaacccca tggccatccc ttccggggcc tacggcgccct acgctcaggc actgatgcag 1200  
 cagcaagcgg ccctgatggc atcagtcgcg cagggcggct acctgaaccc catggctgcc 1260  
 ttcgctgccg ccagatgca gcagatggcg gccctcaaca tgaatggcct ggcggccgca 1320  
 cctatgaccc caacctcagg tggcagcacc cctccgggca tcaactgcacc agccgtgcct 1380  
 agcatcccat ccccatitgg ggtgaatggc ttcaccggcc tccccccaca ggccaatggg 1440  
 caacctgtg cggaagctgt gttcgccaat ggcatccacc cctaccagc acagagcccc 1500  
 accgccgcgg accccctgca gcaggcctac gccggagtgc agcagtatgc aggtcctgcc 1560  
 taccctgtg cctatggta gataagccag gcctttcctc agccgcctcc aatgatcccc 1620  
 cagcagcaga gagaagggcc cgagggtgt aacctgttca tctaccatct gcccaggag 1680  
 ttggggacg ctgagctgat gcagatgtc ctcccttcg gcttcgtgag cttcgacaac 1740  
 ccggccagcg cgcagaccgc catccaggcc atgaacggct tccagatcgg catgaagagg 1800  
 ctcaaggtgc agctgaagcg gcccaaagac gccaatcgcc cgtactgagc gccggcggga 1860  
 gcgtccccc ggggagacca ggactcgcac agggcaggat gctgaacggg ctacattaaa 1920  
 aaacaaacct ctctctatat atatttataa atgagaactg ttggatgaca ctttgacat 1980  
 atcagccaat atcaatcaag ctgaagactc cagacactgt ctgtgtgact gtaacatttc 2040  
 ttcaaggaaa gtatagcgtc tatggagttc agagggcacg tgtttggggg aaaatatata 2100  
 tgacatgaag aagaagatga agaaaaatga gaaaaaaca cacaaaaggc aactttaaaa 2160  
 caaaatatca cgagcagacg gggaggctga agggctggga gctgggagga gacgtgctt 2220  
 accgatcccg gggcttttcc agcccacggg cgctgacgc aggtggggc aagtggcg 2280  
 tggggcctgg tcccaaggg gcggctgaga ggccgcact gagcatctct atctgtcatt 2340  
 cctttagcta tttaggacc aaaggaccaa actttttatt gcagatgtgt agctctatgt 2400  
 caaatagagg gggaatggag gacccctcc ttctgcctc atggctgttc ttgaaacagc 2460  
 ttagagcgat tctatgaaaa aatgtaataa aaaattaaaa aaaaaacaaa aaacaaaaaa 2520  
 acaacaaaa aaaggaaaa taacgcttca atgcttttaa aacagcaaga taatagttct 2580  
 ttgatacttt gagaggcgt ttgatgacc tcaccaagt ctatgacact ttcctatggt 2640  
 tttctgtatt ctatgtctgg atggagctgt taaaagatga acaaattggt ggatatttgg 2700  
 ggaaagcaac acaaatctta aaactcacc gtgaagtgtg agaaaacaag gaggggaaca 2760  
 aatgggactt accaagcaag gtcattgtt tgaaaagtct gtaaagtctt ctaactcttc 2820  
 cccctcttaa aatcataata gttgtacaga attttaaaaa ggaaaagttt aaaataccta 2880  
 tataatagaa gaaaaattag aggaaagcaa aaaataaaaa 2920

<210> 104

<211> 1522

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22633

<400> 104

tcaaggctct ccaggagtc cccctctgcc ggcccccaa tgccccagct ccctcctact 60  
 cgctggagat ccagtgggtg tatgtacgga gccaccggga ctggaccgac aagcaggcgt 120  
 gggcctcga ccagctaaaa gcatctcagc aggaagacgc aggggaaggag gcaacaaaa 180  
 taagtgtggt caagggtgtg ggcagcaaca tctccacaa gctgcgcctg tcccgggtga 240

agccccacgga cgaaggcacc tacgagtgcc gcgtcatcga cttcagcgac ggcaaggccc 300  
ggcaccacaa ggtcaaggcc tacctgcggg tgcagccagg ggagaactcc gtcctgcatc 360  
tgcccgaagc ccctcccgcc gcgcccggcc cgccgcccc caagccaggc aaggagctga 420  
ggaagcgctc ggtggaccag gaggcctgca gcctctagac tgatgccctt gccccggccc 480  
atccgcccc acgtgtaca gagtgcataa ggagccggcg gaccaccggg gaccgactgc 540  
ctgcgtccag ccgcgcccc tccccaggc cgctgtggc caccatgtcg gccctctttc 600  
caccaccctt tgctcagcat gtaagcccca cccaccctg ccctttcaga cccctgcggt 660  
gacctggctc ggagaagggt gccctgggca ccaaggggca aaccgcccgt aacctgggg 720  
cagggaccat gctggggccc ggggccacc ctttctgtc accagcttct gtggagtcca 780  
gtgttttgct ttgcttgctt gtccccatc ctgtcctgag ccggggcccc ccagcctcgc 840  
ctccctctc ctaccatccc tcaactggac ctgggggtgt ggacagtac ccctccctga 900  
atatggactt gaattctctg agcagaacta gggcctctcc cctggtgaag acccagggaa 960  
cccaggagg cccttctctg gcagtggctc tgcagggtca ctcatggagg cctaggggaa 1020  
cagcgagatg cccaccacc tcctggcgag tccttctgt tcagctccct gtgcgaccct 1080  
ccagggatgc aggggatcca ggattctctg ccctgtcaca cggcgagtca gaaggagg 1140  
gcctttccct cggaccatg gcccaggca gagttttgca ccagcaggac ccctttgagg 1200  
gccttcaagg ctctcccagg agtccctctt gggctctgt ccaagtccgc cccagggcct 1260  
ggggctgttg ggagccaagg gcccctggt actcagttcc ctacagattc ccgatcacgg 1320  
gcacacctgc cccctgggta ttgttaaata ttctatttg acccaattct cctcggaatt 1380  
ggctggcacc tctggctgcc gcagctcagt gatgacgtgg gggagggtgg agaggccgag 1440  
ggctttgcct aggggtgggt tgccctgtat acatgatcca gtctgtgact accagccaac 1500  
ctgaataaag cggttttaaa aa 1522

<210> 105

<211> 2914

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22698

<400> 105

gttttaagaa actgactgtg gctccagagt atgttggaga agtgaaaatg gagactagga 60  
ataacagggt ggagactatt agtctaatta agatgtaatt ataaatctaa gctaggaacg 120  
taaaatgaga atgcaaagta agaaacaaat atggggaaaa ttatatgtaa aagtaatagg 180  
acttggcatc ttactgatgt gattgattat gagaaaaatg aagcatgtgg aggagtccac 240  
tggacagtag gaaattcagc ctaagacttg ggtaagagtt ctgtggagtt gtgaattcag 300  
aggccagaga tgtatattt aaaatttttg ttcaagattt cccaggtata agaaagcaag 360  
aggattaaag cattgtaatt aaactttaag cagtgcataa ttatgttata gataagataa 420  
acaagaaatc tagggatcaa ataggattaa aattagtagt gatcattcag tacagtagtt 480  
acgtactgtt attcacaaga gtatataaat caaattacaa ggaattaagg atataaacgt 540  
gataagaaag tatgactgt actctttgag gaagtttgcc atagaaagga agaagaaata 600  
ggatggtaga tcagaagtaa agcaggaccc agtgggggga gtgtttgcag tgaggcagta 660  
tgtataatca tttaaaacat gggtttgag tcctctcagg ttccatgttt gtaatggaca 720  
taatgataat aatccctttc atttaaggct gttgtgagga ttaaatgtgt taatgtgcaa 780

ataactttac acagtgcctg gtatataata aatgcttgct acctattaac tagtatttgt 840  
 ttctaaggct aatttaagtc ctagaattga ttgcaaggat tagatcagga gtatagtga 900  
 catgttggga tttaaatatt taaatataga gatgcttttt aggaccattg ttagaaccag 960  
 aagagatttt ttaccaagtt cacacagaaa tgtagggtgca ttggctgggc atgggtggctc 1020  
 acacctgcaa tcccagcact tgggaaggct gaggcagaag aactgcttga ggccaacatt 1080  
 ttgagaccag cctgggcaac atattaagac cccgtctcca ccaaaaaaaaa aaaaaaaaaag 1140  
 aagtaggtgc agagctggaa gcagaaccga aatcatcagt gttacagtca ttattctttc 1200  
 ctgtcaccat tatatgtctt tatgaagcaa gggagaaaga agaacagatg aaagaagtga 1260  
 ggattttgaa gttgggtgaa agatttgatt gaattctgat ctaaaaatta taaggcactt 1320

gttaacaag ttgaaagtag gaaagtagac ataagactct actagatttg gggaaactct 1380  
 caaaaatgga ctggaaattc agctaaaagt ggataacaaa atatttctag aattagcatt 1440  
 tgtgggtgt gtgtgttttc actctagtat ttgtcaagcc cagatgaaag catagacaga 1500  
 atgtaagact ggatttatct aagtctggaa ttgtgtaaca ttaaaggaat agtagcaaat 1560  
 gagcagagtg ttggctcaag cctaagcttg agcctaagct tgactctatg gtaaagtcaa 1620  
 gtcaaggag aatagaaagg gggtcacccat aaagggtcaaa agtgggttta gtggttgtgt 1680  
 gggaataggc agatcaagaa aagaatgaag ttaggaaagg agatataagt gttgaatgac 1740  
 cattacaaaa agagacagag gaaagaaaaa tgaagatgta tcaaaagaag ttgctaatat 1800  
 ggatggcaaa gtatagtgtt ttaagaaatc atgagaccag agtcttggaa aagtcatagg 1860  
 atgatgcagg gaatggagaa gagggaaata aagccagggt ctgaagtctt tatgtaattg 1920  
 gaggagatgt tccagtaatc caatggctat ttgatggga aagagtgtgg tatgattggg 1980  
 tggcattgac atcggaagcc atcctcattg atgggtgttg aacagcagtt tgaaagtaac 2040  
 attgtgcggt gaggtagagt ggcacatgat gcatccttat tcttaccitt ggagaaaagt 2100  
 tgaggagac caaaaatgac tttttgaggg aattgtagaa gtttcattag aagaaaagta 2160  
 agtttttaat taaaaagtta atctgaggaa caggtagaat aaaagtgtag ttgttagtgg 2220  
 tagaagagaa tggattccat agggcaaaaat aagaactcaa gggaagggtg gtggaagagg 2280  
 aagaggattg aattgtttca agaaagaata gcagttgtca tccttatgaa aagtaaaatt 2340  
 tttattttca aatcaggaaa tgtaaaatgt gccttcaga ccccttggtg gtatacatgg 2400  
 gagattgggt ctaggacaca cacagtccca tccccacc cctgaccca tacacccct 2460  
 ggatactcaa atccactgat gctcaagttc ctgcatataa atggtatagt gtttgcattg 2520  
 gacctataca caaccttta tgtgtacttt aaatcatctc tagattactt atattaccca 2580  
 gtacaatata aatgttatgt aaatggtgt tatagtgtat tgtttaggga ataatacaca 2640  
 gaacaacttt ctatacattt gcagtacacc attgttttac ccccaaatat tttgatcca 2700  
 aggttggtg aatcggaacc cagagatata gagggctgac tatactttaa gaattagaat 2760  
 tagctgggtg tgggtgtggg tgcctgtagt ccagctact cgaggagctg acgcaggaga 2820  
 aaggcgtgaa cccgggaggt ggagcttgca gtgagccgag atcgtgccac tgactccag 2880  
 cctgggagac agagcgagac tctgtctcta aaaa 2914

<210> 106

<211> 1696

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22896

&lt;400&gt; 106

catgtagcaa atctgagaat tgaaaactgc agataaccgg cgggtatgg tgactcatgc 60  
 ctgtaatcct agcactttgg gaggccgagg tgggtggacc acctgagggtt aggacttcaa 120  
 gaccagcctg gccaacatgg tgaaacccca tctgtactaa aaatacaaaa atttgcctgg 180  
 tgtggtggtg catgcctcta gtcctagcta ctcgggaggc tgaggcacga gaatcacttg 240  
 aacctgggag gcgagggttg cagtgagtcg agataacact actgcattcc agcctgggtg 300  
 acagagttag actccacctc aaaaaaaaaa aaaaaaaaaa aaacagaaaag aaagaaaaag 360  
 aaaactgcag ataaccctat acattaatac tggatatctg aggtgactct tctgaccaag 420  
 ggtgggttaag tgacacatag aacttttcta agagaagaca gacaagtga caggcatgcc 480  
 ttgtactcag ctgtgttcat gtggtggtct gtggaaagaa aagaagactc atttggaat 540  
 gaagctgtcc cttccaagc agtctctggt gcttttcttc tctcaaatg gatccgataa 600  
 atatttgaat agagcagatt gtagaatgtc gtgctgtcac cagaaagctg ctgttttggg 660  
 ttctgcattg agccaaatat gtagaggacc taccaagccc actgagggac taggttttca 720  
 tgtctctagt catacctaga atgttctgag ccgtctgagg gccttcatgc cggcagcagc 780  
 tagcaaagcc agaaagcaag tctaacagga tctaagatga ccatcaggag aaggagttag 840  
 agactgtgta tgcaaccccc aatagacccc cttttactct gatctggaga atgtatctgg 900  
 cttcatattt tcaagtcaca tgtctctcag acccctggat tcagaaccca aggccacaaa 960  
 tcatagcat gaagcacttt cttaagactg acctaacgct ggattatttc ccgtccaatg 1020  
 cctgcatgct gcttgaattg ctccaccac acctccatga ccaagggcgc cagagtgtg 1080  
 caactggggc gtgggcccgt ctctgctttt cctgtctgac tctgacaagt cctccctcac 1140  
 tgaatgtaga atcgttgcca agtttctgag aagtgtcgat tccctgttaa catggatatc 1200  
 agttctgcct cacatttccc acttgagggtt gaggcgtagt ggagacaaca cctcagacca 1260  
 tctgaacccc atcagtggat gaaaatgggg ctgttaatat actctaaaag ccatactaaa 1320  
 aatgctctga gggaaactggc taagaatagt gggcctgggtg attgtctatc acgcaaggct 1380  
 ttgttttgta ctgttcagaa atctgtcacc tttctgcctg cccttgtttc ctgaatgaaa 1440  
 tgcttctggg gttatttatg aaaggagtga tcctggggca ggcaggaggc agtgggcttc 1500  
 atggctcctt gaagttatta ctgatcttga ccttctcttt ggctaccttt agacaaagaa 1560  
 tacgccaatc aatacttggg gctctaagtt ttacaattga tatttatttg tatcatctct 1620  
 ttgtctagga atgtaaaagt gattctaaac taagatgtgt aataaaaatc aatcagattt 1680  
 attgtacctc caaaaa 1696

&lt;210&gt; 107

&lt;211&gt; 1742

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla23167

&lt;400&gt; 107

gagcatacac agggaggett cactgggaga ccacattgac ccatggggcc tggaccacga 60  
 gtgggacagg gctcaacagc ctctgaaaat cattccccat tctgcaggat ccgttcccct 120  
 ggcagcagaa ggtcaggttt gccaaaggaa tcgcctccgg aatggtgagt cccaccaaca 180  
 aacctgccag cagggcgaga gtagggagag gtgtgagaat tgtgggcttc actggaaggt 240



agagaccct tcctatgcaa cttgtgtggg ctgggtcagc agctattcat tgagtttgc 300  
tgtgtcactg aaactgaccc cagccaactg ttctcagttc acagccctgt tttcaaagaa 360  
ttacacatct ctaaaggcaa acagggcacg gacaaggcaa actggagagg caaactgtag 420  
cctgagatgg cctgggcttg ccatcacagg tattcaggtg ctgaggggccc ttagaccaac 480  
tagagcacct cactgcctag gaaatcaatg aaggggaaat gagttctagc ggagccctga 540  
aggatcagaa ttggataaag ttcttattgg cagagaggca ccaggattga agtgacagga 600  
gcaaagacct gggaggaaaag aggagaaaat catctatttc acctggaaac aaatgattcc 660  
aagcatagaa ataataacag ctgacaagta ctgagtggcc tctatatgct aggcactggg 720

ctgagggatt aacatgcatg tgcatgttta ttctcatga caaccttggg ttccagataa 780  
gctggactgg aaaggacag agctgggatc ctgggctaag cagtctgggc gccaagcctg 840  
agacttttagc cactgccctt cacatggggg tccatgaaaa tagtagtagt ctggaacagt 900  
ttgggggtac atcaaggctg ctgtgtttta agctatggag tctggactat aggagacaaa 960  
tgtaaaagag ttttttggtt gactggcitt ttggtttttt tgtttgtttg tttgtttgtt 1020  
tttttgtttt tttttcctgt ttctggggct tgaatcagga aggaggtttt tttgtttgtt 1080  
ttgttttgag aaaggatatt gctctgttgc ccagactgga gtgcagtggc acgatcatgg 1140  
ctcactacag cttcgacctc ctgggctcaa gcaatcctcc tgccttagcc tccaagtag 1200  
ctggactaca ggtgtgtacc accacaccta attttttgaa ttttttttc ttttttttt 1260  
tttttttttt tggtagagac aggttctcac ttgtgtgccc aggctgatct caaactcctg 1320  
ggctcaagca ttctcctgc ctgcacctcc caaagtgttg ggattacagt tgtgagccac 1380  
catgcccggc aggaaaagat ttttaagcaa gaaagcttaa gagctgtggt ttttccaaaa 1440  
tgagtctggg ctggcacagt ggctcatgcc tgtaatccca gcactttttt gggaggccga 1500  
ggtagagtga tcacttgagg tcaggagttt gagaccagcc tggccaactg gtgaaaccct 1560  
gtttctacta aagaaaaaaa tgcaaaaatt agctgggcgt ggtggtgcac gcctgtagtc 1620  
ccagctactc aggaggccga ggcaggagaa tagcttgaac ctgggaggca gaagttgcag 1680  
tgagccaaga tcacaccact gcattccagc ctgggtgaca gtagtagact tcatctcaa 1740  
aa 1742

<210> 108

<211> 1416

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23339

<400> 108

tttgctagag ttacatggat tatatatttc ttaaaggga aaatttgaga gtatcatgga 60  
ctaccaccag cattattatt acagtagtta ctgagatttg gtttaaggaag cccaagcaat 120  
gtatagtgaaggaggattatta tctctctgct aagattcaga tattgtttca gaaatctcag 180  
ctccagtaat tccacaacat ctaaaaacaa atgtttgtga tcatgtgtaa gcatgaaatt 240  
gttccaagta agtgaggata ttttagttat gtgaaagaca gtttcatgga aggtatttgt 300  
tttataccag tggctgggat ggtggaattg gggttatttc tacaattatt cttagacgat 360  
tactaaactg ttaagaaatg ccccatatca tttttgtatc taggaaagaa aaaaatcagt 420  
ttcatactgt tgtcatctgt cagaaatgct cattttattt tgaattaaat gtggcttttg 480

aagtagctag ttaccttgaa ttcctgggtga ccacatgttt ttatctggaa aacctggaga 540  
aagttatctg tcccatctcc cctgcttggt tttttttttt ttttttggtt ggagctgctg 600  
tttagatgat gcttttacta tgcaggagag agtttttggt aaggatatat ttgaagattg 660  
gcttttccat attgtccttc attctttgac catggcaaag tgtacagtag attttcatga 720  
tcattgcata tttcttgtca ttgaaatgta tcttttatgt ttttaaagtc attcatttta 780  
cacttgtag tttatcattg actttaagag gtagaaatga aaaatgaaaa ttaaagctaa 840  
agccttttta tctattaatg cagatatatt agaataagaa ttttttggtt ttgtgtttat 900  
tttttaatga atttatgttt acttgatatg gaaaattacg ctttataggt ggaaaagtag 960  
caaataaaga ttaagtaaaa gtaagtgaat atgatgggga atatatgtatt ggaattttat 1020  
agctagttaa aacaataagt atcatctaatt ttgggtgttt attttgcaga tgagaaaaca 1080  
gacctagaac cgtggcatgt ttgcctgaa acatacagtg agttagagac agggcctaag 1140  
atagcttcta gcatcagatc aatcccaaga atccatcagc aacctcagac caaccaaga 1200  
agataattta aatctatact gcttattggt caatataatt ggttctagta ttaataaaga 1260  
aaaaatgttat taaaatagca tacatagtag taaaataaaa taaaaaagt gtgttgattt 1320  
atagctgttt gagatgataa aagtgaagca aagcctgtta aatcattgga agacttggaa 1380  
aattatttta aataacaat tacatgtaat taaaaa 1416

<210> 109

<211> 1549

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a23352

<400> 109

gggattggga ggcccacgcc ctgctgcgag aagggcggt tctagctcct gaggaagggtg 60  
ggagtcacac attttgacaa gtctcctgaa aggaacagct agcaggaact gaaacctttt 120  
tccatttggt ctgctggcaa aggcagagat tgcctcagca gctccacaca aaatgatgtg 180  
ctcacgggtg ccctctgaac agtcttcttg tacctctctc ttgcctaaag acggtgcccc 240  
attttcttgg gattccttgg atgaggatgg attggatgac tccttgctgg agctgtcaga 300  
gggagaagaa gatgatggtg atgtaaatta cacagaggaa gagattgatg cactgttgaa 360  
ggaagatgac ccatcatatg agcagctctc tggggaagat gatggtgggc atgttgagaa 420  
gggagaaaga gggagtcaaa ttctacttga tactccccga gagaaaaatt catcgtacag 480  
cctgggacca gtagctgaga ctctgacct cttcaaacta cctcagctaa gtacatcaag 540  
tggtcatgga ccagctcata ctaaaccatt aaacagacgc tctgtactag aaaagaatct 600  
tataaaagta actgttgac catttaatcc aacagtttgt gatgctctgc ttgataagga 660  
cgagactgat tcgtccaaag atactgaaaa actctcttcc cttggagaag agatgagaga 720  
agatggtctt agcccaaatg aaagcaaaact ttgtactgaa tctgaaggga tcagcccaa 780  
taactctgcc tggaatgggc cccagctctc ttcttcaaac aataactttc aacagactgt 840  
ctctgataaa aatatgcctg acagttagaa ccctacgtct gtattctctc ggatctcaga 900  
ccattcagag actcctaata tggagtatc ctgcagaaat ggtggttcac acaagtcaag 960  
ttgtgaaatg agatctctgg ttgtttccac ctcatcaaac aaacaggatg ttcttaacaa 1020  
ggattctggg aagatgaaag gccatgagag aagactaggc aaagtcattc ctgttctaca 1080  
aactaagacc aggactaatg ttccgacgtt ttacagtca aatctagaac agcagaagca 1140

```

gctttatctc aggagtgtca ttgctcatat agaagaccca gaggacacta accaaggtat 1200
ctcgggggag ctttgtgcct tgatggatca agttcatcat atgcagcact caaaatggca 1260
gcatccttcg gacctacca cgcgaaacta cgcccgccga cagaaacatc tgcaaagata 1320
cagtctgact cagtgggttg acaggaacat gcgaagccac catcggttcc agcgtctccc 1380
agacttctcg tacagttaat ttgtgtcatc ccatcagcaa tgaagggtccc tatccagggt 1440
cctgcttgga gcagcatttc atgttctttt gctgttttgt gctttgccga ttttggattt 1500
tatttttcac aaaattttta tttaaaaaac tcgtcacctt ttggaaaaa 1549

```

<210> 110

<211> 1797

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23575

<400> 110

```

gaggatgatt aaaataatgt gcatatatgt tgaagggcag aggatggtat tgcacaatat 60
agatgaaata gtcattgggt tgttttacat tctatgcatt tttaatgagc aaattcccat 120
ttacaggaat taaatgttcc agatattgat ttcagaggga caatatataa tatgaaaaca 180
aaattcagta acattatgtg atgattacat gatgtgtaat tcaatatagc tagaaccctg 240
gaaagtgaat aatataacca ttcctataaa atatttcaga aaatcaaatt tattccctga 300
agtacattat aataaaacgg aaacagtgtt acttgattta tagtcctcta attcaggctt 360
ttaagctat tttcatgtca aaaataaggg attctttctc cccttgctcc cagtcttggt 420
catagtttat aatgacaaga aaagctacaa aagaaacatt acaaagcaga tgtgctccca 480
agtttggtcc agtttaaaact tcagctttaa gcatcttggt gctatgaaat attcatgtaa 540
attatgtaag tgcacttagt ttagatccca gtcactcatg ggttttctca caaagtaaaa 600
taccatactt gatcctgtct atttctagag agtgaatgct cacctgggtg atttgtacca 660
acccttagg gcatcagggg gacaatcaat taggttcact ggggtgttta cctgacagat 720
actctcctaa atactttcaa atgccctctc attttgttct cacaggacct gaagaagtag 780
gtgtcatttt catccacact ttgcaggagg aaacaaatga ggctcagtaa ggtttttagta 840
acttactggg tgtcatacat gaacagccag gtttcaaact caggaatcaa cagggtgcc 900
ctgactactg ggctactctc cctacattag atgcctagaa ggtatgcaag tggctggagt 960
aggggcaccg acttccatga atggtttaga gtttggtgta tgagcccctg acccatgctg 1020
aagtgactca ggaaaagcct agtcctggga aacttacgtt ttgtattttt tttctcttta 1080
acagttggta ctgaaggatt aaaattatct taaggttaaa aacaggaatg gttgagcatt 1140
gcaaaaagct tttgctgtta gaatagatga catctgctgc ctggctacaa gtcattttta 1200
gatgacacaa aatgatgcta tggagaccac agagcttttg taagaaagca gaaacgcttg 1260
gtcacttttc cgctaagtga ctcccttta ttggaagctg tactgaatct ggaatgctta 1320
taaattggtg caagggcaga tcatttcaga gtaagagata tttaaaaaca aagggttaag 1380
ggaaacctca attgaaacta gagcaataca aaataaaatc tcctactgaa ccctaaaaga 1440
ctcctactga ctgacccttc aaaagcaccc catatgtctt tctcttctcc tctgaaaagg 1500
taactcaggg ccggcggtgg tggctcacac ctgtaatccc agcacttttg gaggccgagg 1560
cgggcggtac acgaggtcag gagatcaaga ccttcctggc taacatggtg aaacccgctc 1620
tctactaaaa atacaaaaaa ttagccgggt gtggtatcag gcgcctgtag tcccagctac 1680

```

tcgggaggct gaggcagggg aatggcgtga acccgggagg cggagcttgc aatgagccga 1740  
 gatcgacca ctgcactcca gactgggcaa aggagcgaaa ctgagtctca acaaaaa 1797

<210> 111

<211> 1957

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a23592

<400> 111

ctaaacacat cgagttgcac acagatggaa ataacattta tgtaaattc tacaagtgtc 60  
 ctctttgcac ttatgaaact cgtcggaac gtgatgtgat acgacatata actgtggttc 120  
 ataaaaagtc atctcgttat cttgggaaaa taacagccag tttagagatc agagctataa 180  
 aaaagcctat tgattttgtt ctaaataaag tggcaaaaag aggcccttcg agggatgaag 240  
 caaaacatag tgattcaaaa catgatggca cttctaactc tcctagtata aagtatgaag 300  
 tagctgacgt cggatttgaa gtaaaagtca caaaaaactt ttctcttcac agatgcaata 360  
 aatgtggaaa ggcatttgcc aaaaagactt acctgaaca tcataagaaa actcataagg 420  
 caaatgcttc caattcacct gaaggaaaca aaaccaaagg ccgaagtaca agatctaagg 480  
 ctcttgctcg ataacttcaa gtgatgtacg aaaagggttg gagttcattt ttgtggaaag 540  
 actttaaatt ggtgttagaa ccactaaaca tcttcaaatg gtactatgag gaaaaaaga 600  
 aaaacatttt tctaaatatt caactataac tgctgttttc tgactaaaat aaccatctaa 660  
 ccacttggtt ctaaggcact gcctattcca gcactttcaa gtagctgtga tattacatgt 720  
 tgtcatcaca gtccatcagc tatccaccct tgaccttggt catttggtcg acagtttcta 780  
 caaaaatgtt acaaattttg ttttctaaac aatttggtga ttaagtgate aacaacctga 840  
 agaaaatatc aatttttaat tgacaaagac tttatatctt agtgatttta gttttgtttc 900  
 tctttatttg gcaacatttt catctgaatt gtatagatat atgattttct agtgagtgtg 960  
 tgtaggaac aaaagacaaa atagtatcaa cacattataa atatttagct tactaaatat 1020  
 ttgtaattat ttttaccatc atttatttct agctgttct ccagcacttc agtgtttgaa 1080  
 agtttcatcc taaaatatat actacaggaa agctgcagtt cattttcatg catggatcat 1140  
 tacatttttc acttgtaaatt gtaggttttt atgaaaatta aacattcccc tatttttctt 1200  
 taaattttat acaaagcact ttaatgatag atgcaacctt atttttcagt tcctattttt 1260  
 ttaaagacca cacatttact aatgttaata tgaaggtaat aaatagctta ctgatatttt 1320  
 atggatgcag acaatccatg cacaaccact tcttatgata ctagtttatt tccttaaata 1380  
 ttgctacaaa aggaagatgc ggggtgaagc cctgattttt ttttctccca agaaaaatct 1440  
 taaaggacca ctttagataa tatttgattc ctactgtaa atttagaaaa tgatgaattc 1500  
 ttgtccattt ttgtaatcaa gatttttaga aaaacagaag tacatctatc tttatgaaat 1560  
 tttgggcagg tttttgtgta tcaatatatt gtacttttag ggaatatatt attttttagt 1620  
 tattttgtgc aaattataat tataaaaggt acagcagaaa atataccatg tttttatata 1680  
 ggttcacacc tgtacttagg agggaccctg tccatctata tactttttgt ataaaatttt 1740  
 aaaatgttaa agatccacaa ggtcttaata aaatgattct atagctagaa aaacatttac 1800  
 cttccagtg ctttgacta aaatatactg tgaaaggaaa ctagaaagac tgtaactatt 1860  
 gctggaaatg ttctatattg aatgtacatg ctcttggttg aaaaatgtac tatatgtgat 1920  
 ggaaataaac cagaatcgaa gttatttcag ctaaaaa 1957

<210> 112  
<211> 1674  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nbla23601

<400> 112  
gagattactt cctgctgcac tcctgtcttg ccatgcacgt cttgccccct cacttttgc 60  
cagcctagca gtctacttca ctttattgcc gtgtaagtgt caggcctcct ggggtgctctg 120  
gaaaagacag ggagccaggc cctctcacc ctactggtta caggtcattg ctgggtgcac 180  
aagagggagg tgatttgcatt catggtcatt ctgcatgggc ttactggga tgctgttaaa 240  
caccagagga gccaacctat cagaatccca gcagcaaagg aaaactcaga ttttagaggc 300  
tttttacaat aaagtagcgt aactctaggc catgattgat ttcaaagcc tgccatgaat 360  
gatttgaag tatttatgta ggatccatca aagcagtatt gtaggctttt gaattgtccc 420  
agtggatccg ggacccatt tcaactgtct tcttgatcgt gttaatgat caatcagagt 480  
tcaagacagg ccccatgaag tctgactgca ctgggatgga gaaatgaatt tcttccact 540  
gaaggaaact ctttctcatt cgcagccaag acgggagtgc cactgttcct ctcttctc 600  
ctgagatact gcttctggaa gcgggtgtca cttcctctct agtacctctt ctcttctctg 660  
aagtgtgtga ctatctccta gtgtttaaat ttggcagtta ctgccaatgt atgtcagcat 720  
agaaaaggaa atgtttttac cttatctcct gtatgtatga tagaacttaa aagaaatgtg 780  
catttgtttt catagcccca gcagagaaaa tcctcttcat agattaaatg tgctgctgtg 840  
gacaggaggg aaaaaaaaaa cctctacat attgaaaggc accaaatgta atatctgaca 900  
ctgttaagat gcccaaaaga gcaaagttgt agtgagatg cagggtcatt tcccatgcc 960  
atccacagtg tttgttagtg agtccacggc tgacttgag tgataaagaa aagcatggag 1020  
ctgtgtctgc agacaatggg ggctgcatct gtaagtggct tcagaggcag cagccctggg 1080  
gaaattgatg ggtgtggcag tggacctgtg aagagggaga atctagcctt cagcctgtcc 1140  
agtgttaacc actagagaaa ctgagcttta tctctttt taatgcctgt gaatttttagc 1200  
atattgaaac attagagcaa atactcaggg gatttttcat taaacatccc tcagataatt 1260  
taggtatata tcattagaaa gggaaagcta tcatttttat tttaaaacta aacaaggcca 1320  
tcttataaac tgtcaccaaa gtcttccctt ttttattgca tgtgtgcctt gaatttcata 1380  
aaacattaat tcacaatggg ggtcagaatg tactcttggt gaaacacttc ttgtaccatt 1440  
ttatgttcat attatgtttg agagggtaaa aatgtatgag cagcttaact gaagtagaac 1500  
tattcatgat gcttttcaca cattgtggca taagatgtaa agttaagttt gtaattaatg 1560  
ttaatttctg tgcattttta tttctttta taattattaa tgtaatttc tgtgcatttt 1620  
aatattcttt tataattatg agcattttta taaattcatt ttacaaaca aaaa 1674

<210> 113  
<211> 1490  
<212> DNA  
<213> Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla23630

&lt;400&gt; 113

actcagtatg taagtagatg agatttggtg attttgcccc taaaacgggc tttagtcatt 60  
ttaggagtga gttgcacaaa aggacctaaa atgcattgtt ttttgccttc ttttaagaga 120  
tggggctctcg ctctattgcc caggctggag tgcagtgtgc tatcatacat agctcactgc 180  
agtctccaac tcctcatacc agaggcatgt gtcaccatgt ctactccta aaatgcattt 240  
ttaaaaagcg aatttttaga ttaaagtgcc tagtttctga ttaataaata gaagatgaaa 300  
aaagtgggcg ggaaaagcat aatcttttaa gatttgaat tttctgtatg tgccacattt 360  
atgtaaatta actataaaat atggaattca ggatcatgct gttttgcatg tactttatag 420  
gttatatagc atgaacata caaattatca ctgttcttta gtatatagct ccttgccttt 480  
tcttacatag atgcttaatt taacaattac ctatttatag ttcttattat tgacgggaat 540  
atgattagaa gtacaaaac taaaaattcc attatgtact gtttactttt tatttaatat 600  
tacatgtttt taccttggtg cggatctttt ggccttcaca cacacatgtg tgcgtgcacg 660  
tgcatttcat taccatgtag acaagacagt tattgcttat agtaatttac ccatttgagg 720  
gctaagtgtt ttaagctgtg gttttataag caaagctgta agtaaatgta atttatttta 780  
gaaagatatt atttgaaatc aattttgaag aattgcacta tttgataatg ctgctactac 840  
atgagataac tctggggaat taattttatg agataagatg aatggcttct tagaagggtg 900  
tgctttttgt ttttctttt tcttttttac atttcatctt agaaaaagtt gcttatattc 960  
agcaggttgg tttgtcaaat tcagtgtttg agtttgtttc tggtcagttc agtagctgct 1020  
actttagcaa gatgtggcct ttcacaaaag aggtaagagt gaccaaatag aatttttaga 1080  
caataagtat aggaaatatt tctttatcgt aagataagaa acttgaactt tttaaaggaa 1140  
atgtcctctt gaaaagaaca tttctgactg catgcagaag ggtacttaag acatatataa 1200  
caggccagga gcagtggctc acgcctgtaa tcccagcact ttgggaggcc caagtgggca 1260  
gataacctga ggtcaggagt ttgagaccag cctgaccaac atgggtgaaac cccatctcta 1320  
ctaaaaatac aaaaattagc caggcatggt ggcgcatgcc tgtaatccca gctactcgag 1380  
aggctgaggc aggagaatcg cttgaacccg ggaggcggag gttgcagtta gccgagatcg 1440  
tgccattgca ctccagcctg ggcaacaaga gtaaaactct gtctcaaaaa 1490

&lt;210&gt; 114

&lt;211&gt; 3442

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla23754

&lt;400&gt; 114

cttacaaatg tagcagttgt gaaagagtct tcagtcgtag tgtccacctt actcaacatc 60  
agaaaattca caaagagatg ccctgtaagt gtactgtatg tggcagtgac ttctgccata 120  
cttcatacct acttgaacat cagagggtcc atcatgaaga gaaagcctat gagtatgatg 180  
aatatgggtt ggcctatatt aaacaacaag gaattcattt cagagaaaag ccctatacgt 240  
gtagtgaatg tggaaaagac ttcagattga attcacatct tattcagcat caaagaattc 300  
acacaggaga gaaagcacat gaatgtaatg aatgtggaaa agctttcagt caaacctcat 360

gccttattca gcatcacaaa atgcatagga aagagaaatc gtatgaatgt aatgagtatg 420  
agggcagttt cagtcatagc tcagatctta tcctgcaaca agaagtcctc accagacaga 480  
aagcctttga ttgtgatgta tgggaaaaga actccagtc gagagcacat ctagtccaac 540  
atcagagcat tcataccaaa gagaactcat gaatgtaatg aagatgggaa gatatttatc 600  
aaattcaggc ttcattcagc atctgagagt tcacaccagg gagaaatcat gtatgtactg 660  
catgtggtaa agccttcagt catagctcag ccattgctca gcatcagata attcacacca 720  
gagagaaacc ctctgaatgt gacgaatgaa gaaaagggtat tagtggttaa ctcttaatcg 780  
actcctgcaa atctatacca gtgagaaatc ttacaaatgt attgaatgtg gcaaattttt 840  
catgctatta gtattttcat accttagtca catttggaga attcacatgg gaataaaatt 900  
ccattgctgc aatgaatgtg aaaaagccat cagtcaaaga aactacctg tttagtatca 960  
aattcacgcc atgcaaaaag attataaatg taataagcat gtatgtgtgt gaggagattc 1020  
agtcataacc caacgctcat tcaacatcaa agaatttata cctaagagaa cttatttggg 1080  
ttagtaaat ggcagatctt tcaataggag tttactagt cttgtcata tcagaatata 1140  
catagtagac aagaatttga tgaacgcaa atggaaaaac tcgacaccac atttcaggct 1200  
ttaccaaca tcgaataat ggagagaaaa ttgttgatta tttgtttatg aaattgtaa 1260  
tacatagtcc caatctttt cattgcacaa aaatctaggg ttgacttgg aaatgcagtg 1320  
acattttctc atggagtcc tttattta atgtattcta agtaggtacg tttattttta 1380  
cttttttatt ataatttga tattaanaag aacagagatg gggcttctg tttgttccca 1440  
ggctggtctt gaactcctgg cctcaagcga tctcccgcc tgcctccca gagtgtggg 1500  
gttacaggcg tgtgtcactg tgctgggcct attttattta tagaactcat ttaagctgtt 1560  
tttttttaa tatgcctat aaacattttt atatttttg aaattgggtc ttagtgttca 1620  
caacttccat aagatactgc taatgcacca gtattaaaac acatcgacgt aagtagctca 1680  
tttagctttt tctgtgttc ttggcccaag tcttttcaa aaccaactct taggcctgct 1740  
ctttactagg gatcttatgt cgtattgctt tacagccaca acatttggat tctgttgat 1800  
taacttctcc attctcttaa gcacctttag aagattttaga agtttcttag ttttaagtgt 1860  
ttcaccagca agtattccat acctacttga tgtgtgtgt ctggtgtctt atttctaaa 1920  
gtgaagcatc tttttttaa aaagaatttg attgacaata tatccagtcc aatataagta 1980  
tgaaggattc tctctctga gattgtagca ggcagccaaa cattttcaa tgatgcccc 2040  
ggtttttagct gtcttgtgtg catccacagt ctgcaagaa gacatgataa ggacatcagg 2100  
gagccaacaa gactccta atgcctacta cattcatcca gtgcctattc tgcatgccta 2160  
agcttagagt tcttttatat acctctacgg ccagcaaat gctcaggtct gctcttggt 2220  
gggtaaacat aaagaagata cacaggccgg gcatggtggc tcacgcctgt aatcccagca 2280  
ctttgggagg ctgaggcgga tggatcacga ggtcaggcag tcgagaccat cctggccaac 2340  
atggtgaaac cccgtctcta ctaaaaatac aaaagtttagc cgggtgtggt ggcacgcgc 2400  
tgtaatccca gctactcagg aggctgaggc gggagaactg ctgaacctg ggaggcgag 2460  
gttgtagtga gccgagattg caccactgca ctccagcctg ggcgacagag caggactctc 2520  
tctcaaaaaa acacaaaaaa acaaaaacaa aaaaccatac acacacacac acacacacaa 2580  
atcagcatca taagggaatg tagccttcca acagagatga tgcgttctgt atgttaatct 2640  
cagagacagt atttcaagag agtggcaggc ctgttcctgg taaaatttta accattagga 2700  
ttcagataa atgtttgaat tctgtctctc tctcatcaat ccaggacagt atttgaagt 2760  
tgagggcttt gtgtatagtt gtttatccat taccacattt ttgtatttta atagtctaca 2820  
ggctatataa aagaacatgg ctttttgact gataaaagt attacagatg ttggtcaag 2880  
ttcagggcca catcatata cctaacaaga gtcatgatt ctttaggtaa tgtcaaaa 2940  
ttttgtattt ttcatctta agctttataa cattttgtga gtaagacaaa tgtatttta 3000  
aattcttgtt gtcagtccag caattgaggc tttcatagtt cagtgttata atattcagta 3060  
gggacctca acaatacat aaaaatatgt tgctactct ataactctcc tatggctaac 3120

ctctaggata gttctgccac tatattttac ttctttgccca tcagcaagag taggatttca 3180  
 tcaaggcaag gtaggaatct aaatgaaatt gatataataa tgaattgatc taaatgtaaa 3240  
 agcaaatgaa aaatgcatgt gttttttcct gtcaaacatg tataccctta tgtatagaga 3300  
 ccagtagtca cgtatgggtga ctgaaacagg attatgtaat ccctaaaaag cagaatatgt 3360  
 aaaaatcaca tgtatgcgtt tggtttagga atgtgctttt gtacttccac ttgaataaag 3420  
 gtgtgtttgg tattctgaaa aa 3442

<210> 115

<211> 2384

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23892

<400> 115

atttaagttg aatgcttttg ttcttttcta aagacttata aattgcttgc aataaaataa 60  
 tgcaaatgaa aacacatgag ggtaaaataa taaaataaga taaaattat ttaaagcaga 120  
 agccgctagt cagggttagt aaataagctt agtggagttc atgaaccac tggaattcca 180  
 tgtatatttt tgcatacttg ttttatggag gtggctcttc atacggccaa tcaattcatt 240  
 gattctgagt gatttgatta tgatttgctt gcctaaaaga ataatgttta gatgattttg 300  
 agcatctaag aaaacctgat agttataatt ttgaactggt ttgccttaaa gttcttgaat 360  
 ataatttagg aaggatgtt aagacacaca tatgtgtggg tgtgtacagg gggagtacaa 420  
 aaaaaaccac atttttaagt tcagaaaaaa aatcattgca atttgttgta aacagcatgg 480  
 actaatgata caggatgatg ttggttgaat tttcaggact agcaatgtaa ctttgcaatg 540  
 gatacgtaga tgccattcaa ataagtatt ctgttattta tcctgttttt ttaaagtaaa 600  
 aatattaaac ataacttagt ttgtataaga aaaaataatt gcaggaggta aatgtaacct 660  
 gtctgagata acacacaaaa ctctgatgat tgtattttgg agttaagact atgaagctaa 720  
 aaaatgtgtg tgcacataat ttcaaatatt aggcccaagt aattttattt tcggaactgc 780  
 tcattaatta tgggagcact cagtgtttca ggaagtgtta agacttcagg gtttcagcaa 840  
 tgaaattgat aaggctcttc cctagatcta agaagagaca gacaataaac attcaaaagc 900  
 aagaacataa gatactgata aattctaaga agaaaacca gtaggatgat atacaggggt 960  
 gtgactagga ggtagagga ggttgctctg aggaggtgat gtttatgcaa atctgaatga 1020  
 taggaagccc agcaagagat ctgggagcag agccttccag ggaaagggaa ggacctgtgc 1080  
 aaaaccccag agggaagtc catctaggct tgctcaaaga caagaaagag gacaagaaca 1140  
 ttaagtgtgg ggagagtggc aagaggcaag atcatcaggc aagggcgcct cagacaagac 1200  
 cacgcccaagg ggagagcaca gggcagagca ggactgtgtg gaaattccaa cgtgaatgac 1260  
 ttccaaaatc aggacacagg ctctctcccc agcctgacct cttctgggtgc ttaactaact 1320  
 tgtagcaaaa actccttggg gcacagcact gagtctcca gccaggctgc ccctttgtat 1380  
 tgacatggca gggatagagg aggcacgaga gactgtaact ttctagagtt agaattgtctc 1440  
 tagtaactct agagacattt tagtgctaac ttacaattga tctggcaaag aaagataggc 1500  
 agagctatta aagtgttcaa tttccttcca gagagattct tccattttct ctattacaa 1560  
 aaccagaaga tcagctgtgt ggggccatca gctcccagcc taaggctcta taacctgaag 1620  
 cttgaaggca atcagtacct ctgctttata attgatcact ttgaggagcc aaaggaaaga 1680  
 gtgaaagatt gggactgctt tgagtggaga tggcactgaa ctctgttata taactacaaa 1740



tgcaatttaa agtaaaagca tgagtatata aattgaaagg gcaggtggac agaaagaaga 1800  
 gactgactcc tagacaggtg ctgagaaagc agtgtaatta aaaagataag gaagggaag 1860  
 gagctacaac atataccaca cacacacaca cacacacgtt atcagacatt 1920  
 caaaaaatta gatcttagac tccacaatac aaatcccaga ggacaatgga ttacagtgtt 1980  
 gacaggggag aaatattgtc ataaaatcat tgcatactta gttatgtttt cattgttaaa 2040  
 gaaataaaca gaccattttg aggtagttaa acctcagaga agaataagcat gtatttactc 2100  
 ttcttgaaat ctatgttggc tttatgcccc agctgagata ggaatcaaag gtgaggttga 2160  
 aaataaatag ggataatata aaccgtccac cagatttgtt taaatctaaa gaatcgttca 2220  
 gtattttatt gtatctcact gtatgtgaaa agaaacaagt ttcaccaaac aatacttagc 2280  
 cttattttgt atatgcagtg cattataata ttttctattt tgttctgtct cttttttgt 2340  
 tcatgcttga cacaaaacat taaattggtt ttgcaacctt aaaa 2384

<210> 116

<211> 2971

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23956

<400> 116

atccagataa tatttatata atgaatttct aatgggagac ctcatgctag attctgagga 60  
 tttaaaaaaa taagttaaaa catagtctct tgtttttcca tggagaaaga attactctc 120  
 cctgactgag gcttcagttc catttcaaaa agacataacc tttaaaatca ttggttaact 180  
 ctttgtcaat gtccctaact tacttaatca attgcacttc aatcgtgggtt ctccctgatt 240  
 gtttgcttac ttttttccaa ggtattgaag tgtaaaatca cacatttctg tcttcattga 300  
 tgctactata tatctatata tcagcttggc caaaactttc tctgaactct gctacagtct 360  
 aacactcttg ctatgtaact ctccctcctt atccctctag gtgtaggagg tcaggcctgt 420  
 atccaatgtc tattcctgtt ttctcctctt tatacttcac aagcgtttcc tctaataatt 480  
 tcctctaggt ttaatcctgt tttgggatct gactcttgaa gaaccaaata taaccaaata 540  
 ttcactctga aaagtgaaca aatataaaat gcatttcagt tcatagccaa cacataaata 600  
 atctctgctc tactgcctac tccctctttt tctcaagtct caactagctt caaaataatt 660  
 tttaaaaagt cagcctcctc agctctgtga attcctgtac atgccagtct cctccattta 720  
 cagccgaatt gtaaagatta acttttactt aaaaacctca agttcagtgt tgctatatcc 780  
 ctggggcagc tactcacttg tattcatgtg atggtaggaa gaaggtgaag aaagatactc 840  
 cagagagcta aatgcatata ttcctaggtg catctagaca cctaggaata atctggttta 900  
 atttgtttta atgtacagtt gaacaaggct aggagaaaat ccagaggcta tacttcatta 960  
 gtatgtgctg attacctcca atgaagtact tatacccacc tgagtttgcc agtcgtttac 1020  
 ttcttctttc caatagattg ggagtttcta aaggatacat tgggtctatt gtatctgtaa 1080  
 ttctagatct taatgcattg ataaagagtt caattaatac tagttgaaag aaataaaaga 1140  
 ctaaaacaga aagacggaaa aaaggaagca cagaagtata gttttgtgat aaaaagagga 1200  
 catagaagaa tgctaaagag tgatagttcc aaaggagata taaagataag atttttcagt 1260  
 ggaagaggtt atagatgttt aagggtaaat agagaagatt ttctggtgga aacagaactt 1320  
 aacccaaatt ttgtcggaaat agtaagactg ctataaagga tacacaagat ggaaggctct 1380  
 tcaggcaagg cagagaccga agactcatat gtaaattgca aacttaaaaa caacaatagc 1440

aacaatagtc aagacctgac acaacagaag aattatattg tgcaatacaa atctttgttt 1500  
tgataaggat actaaaatta tcttggccaa agtgccaacc aagcaagcag taccagcagg 1560  
ggagcataac ctttcatat tcttagatac agatttgta tttgtctgtt ttttatttt 1620  
ctctgaaaag gtgatctact cagacggttt agaacctgca tatgcatggg gcaggtggat 1680  
gataatctct ccctaaccat ttggattagc tgaatcaaca cggatattca aaagactgaa 1740  
gaggttgtgg ccagatcact ttcaaataga attctacaat gttcaaaaga attcctttca 1800  
ctgtgaattt gagaaaagac aaaacagtct ctgtttgtac acttgcaaat gacagaaaag 1860  
ctgttacaag cttcctgtca tttttgaaa gagtgttagc attgggagag aagaaaattt 1920  
gggatgtga aggaaaaatt ctcttggttag aacagaaata atattttcaa aatcacttaa 1980  
gaaagataaa ataataaaga tgccaggact ttgaaattac atttctaaat atttggtatg 2040  
cttgagaaca gtgagttaga ttgctagaat ctgacctgc tacatctcaa tattaagta 2100  
tgagaaaaaa atcaaagaaa tccctttcac taatattgat gttcttacac ctgatataac 2160  
ttaaatattt ttcctagtag atgtgactt gaggcctttc tatcaatgca gccacataac 2220  
tgtgttgta cacaggctat agaaactaac agattattat aattattatt gattattaat 2280  
ttatagtgag ccctcaaaaa taccaatata ttagtttgtt ctggagtct acaaaaaaa 2340  
tttaatttgt tttctatatg acagtgttta aatatttcaa gagagtatgt gccatctaag 2400  
tctttcttc tttaggcaga acatacatcc tctaattct aataacactt gaattgataa 2460  
ccttctattt attattagat ttttaaagca gcactcccag ccccttcaag ttaaaacaat 2520  
tctccaggta aattctggtc aatacagtat aaaaagtaaa gttcttttc tggactcaa 2580  
attctataaa ctctttatgg acagcttgat ttgtaatga gcttaataaa cttagaaaat 2640  
ccatttaaat cctatactta ataaataaaa caaagcaaaa catgaattgc tgttcagcta 2700  
gcttttcctc acctgtacat ttgtaatgat atttttctca tccacatggg ggccttcata 2760  
tttattctta ctatcatttt taattttctt tttctgtgtt gtatactaaa acacatctga 2820  
acaatgattc ctgacctat ttagtgaatt ggaagcaaat acagttttca tcaacttgta 2880  
cagctgaatt ccatgaacaa tttcagggat gcagtttgca ggattagttg aagaggagaa 2940  
aacctggagg caaaagtaaa ctctttaaaa a 2971

<210> 117

<211> 1745

<212> DNA

<213> Homo sapiens

<220>

<223> nbla20365

<400> 117

ctttccctca ttcaccacct tccagggttt catagaaaat aacttgttac aaaatcagtt 60  
caattctaata gtggacatag tggcatgttc ataattagac ccatataggg gacactgagc 120  
tttaaatcgt tgattctaaa ctctatacat taaaaaaatt cagcccaggc ccctcaaagc 180  
ctgagaaaat ttaatttgct ctttaatttaa tgttccaaaa ctactcttg gaaaaatgcc 240  
tgttgaaaa ctacagggtg gtcacatgtg ggggctgtct ccgtgacact caggattcca 300  
gtcagaacct aatcctcata tctattgcct acaaaaatag accaagaatg ttgtgctct 360  
tttataatcc tttaaatatt taacattcaa gtittctttg tcttaaattc agcctcttc 420  
taaaagcaaa aaagaaaaaa aaaacctcac agaattgtgt tgagatccac cgctcacacg 480  
ccgtacacca cccagtggct tcattctggc ttagccgcag aggcaagaaa gggacccac 540

ttgctcccat gccacctca agaaaaaaca taaaacaatt ttttttaaaa aagaaaagaa 600  
 atctacctca gttgacagga ttccaccttt agggtttctt caacttttaa gtcttacctg 660  
 ttgagtgtaa cttttgtagc atcttgcttt tccaagcaag ctagtgaggc atgacagagc 720  
 agaagtctgt aaatgtccct gtgatggacc tctttctagc atgttgacgt tttattttta 780  
 ataaattggt aagtgaatg aacgtaaagg taattgtgta cgttttagac atgacaatga 840  
 aaatttaaaa tgtagcttcc atacttgtgc ataattccaa agtattttat ttttatcaa 900  
 tcagtgttaa atagcttttt gtacaggctt caatccattt ttcgaagtgt gctgtttttt 960  
 aatgaaagta actataatct tttcacatcc catggaactg ccgtttacac attgcaactt 1020  
 tttaaactta accatatttt tcaaaattaa cgtttttgga gggagaaaaa tccccgctg 1080  
 ctaaagtata ctaaaccgtt gtttgggctc ttataattag gtcctgagat tttataaaaa 1140  
 tttagtctgt agcttttttag gttcttctact agagttgggt gtacataaaa ataataaaga 1200  
 atataaagta tcccaaaatt cttttaaagt ctggattttt ccgctaatat gtactttaga 1260  
 gaatattttg ttcatgcata cttccacgtt aaattgaaaa tgtcttcagc ttctcttggt 1320  
 aaatgtgaac catttgtttt ttattgtgct tgggggagag ggtattttta tataattttt 1380  
 gcctaaatca agaagtcccc tctgaatgtt aatttttaaa tgcataaata tgatgaacga 1440  
 tatacttga aagtgaagatt gcaatatgct taaacttaag tggatattca aaaacgagaa 1500  
 aattctggaa tttgtcattt gaagctccat aagagaaatt gataggactt cgtttttgat 1560  
 cagtctgaat agataccaat gtcattgtgt gggaattttt ttttaactgt ttatgtatta 1620  
 ttttgatcca tttttctgtg gcatttggtg caataaaact ttigaattta tcttgaacat 1680  
 tttctgggtg ctgcatgcga tttgttatag ttaataaaat gtagaggtct catttcta 1740  
 aaaaa 1745

&lt;210&gt; 118

&lt;211&gt; 929

&lt;212&gt; DNA

&lt;213&gt; Home sapiens

&lt;220&gt;

&lt;223&gt; nbla20378

&lt;400&gt; 118

gtaacaaatt gcaagaaaaa caacttaatc ttccagtac taagtaagaa aaactgttgt 60  
 cactattaaa catgtaggaa attgataatt attacaaaca aagcaatact ctaccctaaa 120  
 tctagacaaa tcaactggaca gatgataaga ttttcagctt tctcctttta agagctgtgc 180  
 caatgtacag atttttttgt aaacatgcaa agggaagggt acaaactcct taaactttta 240  
 aaaaccataa atccttttct tgctacttat attctatgcc aattataata ttccaagact 300  
 taccttttct cagaatgctt acatatggaa aggtttattt ataaatattt gataggtaaa 360  
 tattccatat gtattttcta gcccgctctt ctctgtccct ccttcaaata acttcattac 420  
 cctctccttt ttaaacgaaa tatcttgata ataagaaaac aaaatcattt ttttgtgaaa 480  
 taatacatat ggacaaaaaa tacaagtgtt attttacttc tggttcatta aaatattgtg 540  
 tttagtigga ttttttctc ctttatcttc agaacataa aagaaattgt ttattttcct 600  
 aaaggataaa attggatata gcctcttag tagacactat cacagttctg ttgtttgctg 660  
 tgttcatttg cttaatgaat tgcgtgagaa cagtcactgt aatgaaatat gtgtgctggg 720  
 ggtgggggga agggcatggg aaatgtttta tgaaaaaag ttataagcct aatactatga 780  
 agtaacatct aatgcagttc tttttaagtg caatatattt atttctgcta gaaatatatt 840

atcaacctta tgtaatatit gaagcattac atattatttg taaacagctt aaaattatat 900  
attaccccaa ttgtacataa gtacaaaaa 929

<210> 119

<211> 1972

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a20511

<400> 119

atgtacacgt ctctcaaaact atgaagagaa gatttgggag gattatgaga aaatcctcaa 60  
taccaaaacta gcagagcaat acgagtcgtt tgtgaaattc acacatgagc agattatgcg 120  
accatgtggg acaagcccaa caaactatgt gtcttgaagc ttttgttgag agatctcggg 180  
accaggtttg acctcaaggc atgggttgcta tacatttttt gcaactgttt gatatacat 240  
ttcagctcca actttgcacg ctgagaacat tccaacgttt ctgcagggtc attttatacg 300  
acttgaaaga ccttaaaaact ttctgggtgc cacagggtata tctttctttt ctgttcaccc 360  
agtaaatagt cataccctac tgtgacagat ttttccaaac aaaaatacct ggagcagcag 420  
tgtagcaaaa tatgccttca gtggcactca acaaatggag tttccccaag cacagttctg 480  
taagaagtgt gtgtgagagt gtgtatgtgt ctgtacatgt acttttagatt atggtttgta 540  
ttgtgcaaat ttttttgatc ttgggggattc tggctgtgga ttgatgcag aaaattatgg 600  
ttaaaaaacta tgggtctacag aagatactta atgctttgtg actatataaa ttgtaacagt 660  
ggattgtttt atgtgttagt attattgtta aatatgggga ctgttcacca ggcacaaaat 720  
aggaatcata aattaggatg caggctgggt atggtggctc atgcctgtaa tcccagcact 780  
ttgggaggag gccgagctgg gcggatcgct tgaggagagt tcgtgatcag cctggccaac 840  
gtggagaaac cctgtcccta ctaaaaatac aaaaattagg tggacatggt ggcgagcacc 900  
tgtaatccca gcttctcggg aggcctgaggc aggagaatca ctgtaaccag ggaggcagag 960  
gttgacagtga gccagattg tgccactgca ctctagcctc ggtgacagag taagattcca 1020  
tctcaagaa aaaaaaaaaa aaagtgaaga tggccattgg ctgtggttat gacaatacag 1080  
tgaaagtctg ttgtcttaga tatacaata catagtga aattagaaca aactggagac 1140  
tggcctttga cacatggact ctgcctagct gtgttagaaa aatatttaac tccaagcctt 1200  
aaaattccca aatggagttg gtgcttacct cattcacaca atccaagagt tcaactgggtc 1260  
ctgaacctct aaagggaataa ggtctccctt ggagcaggag catcagagtt tgctcggggg 1320  
cataaggtag gtgagtgtg ggccgaggca ggctccctg gcactgctag ttgcaggagc 1380  
actttacctt tgtatcagtt actaaaaa aaatttgaat ccttttgtca ggttcccca 1440  
aattattttg aggtagccat gtttaagtgc ttgagctttt gtgttgcaa acccctgccc 1500  
aagggttgta atagggtatt ctgcccctt tttccacagc tgaggcacag aaagtagcct 1560  
cttttgtag gagttgggag ttaagtatac attattttt ttaccatgat ttgttcagga 1620  
ccacatttta caagatacct tgtttccttt attattgttt ctggaaagtc ctattcatat 1680  
tattttattt gaatatagaa tatagttttt ttaaatgagg gctattttt aaaaattctg 1740  
agcttaattc aaatttatgc caataccttc ccaataagg taatagtcaa agacagatgt 1800  
tctgatcaaa tggcttagag atagtcctgg aatattcata ttcaaagatt ccttattaat 1860  
gaatgtcttt aacttaaatc tacccaataa ttgcaaatg gttctttgta cattttcatt 1920  
atatggtgtt aacaagcttc actgcaaaaa aataaattac ttaagttaaa aa 1972

<210> 120  
<211> 1806  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nbla21039

<400> 120  
ttggagcggg ttctgaattt gttgtttgtt taattttttt ataccctcta ttccttaacc 60  
atgctgttaa ttattgccat tttatcattt gctttactgt gtgtaagtt tcaatggggg 120  
taaagtgtac tcttcttttt taaatatitt tggctatatt tttcatgta ttctcgaga 180  
taagcttcag ttatgttttg gtcacattcc aaaagaaatt ctattgccat tttgtttgga 240  
attgctttta caatatagac taatttgggg agaattacca actttgtaat attaaatttc 300  
ttattcagga acttgatcat gtgtaaggtt actgaagaca atctccaaat gttctttagt 360  
aattttgtat gttttgcata tttttattaa ttgtattgtt agatattaca tttctttgtt 420  
gcatttgaat gggatcattt ttccatcatt ttttattagt ggctactcct tctgggggtca 480  
agctatttat ttttgtgttt gataactttt ttgaactcct tcattaatac tccctagtgt 540  
attctcttct aagtagccaa tcattcttaa gtataattaa tgggtatttt tctctcttcc 600  
tttataatat ttataacctca tgtgttaaat aaatgatggt aataactttg cccttatttc 660  
tgatttgtta ggtatgccat taaattttac cagcttttaa atgttagctc ttagactgaa 720  
atacaggtct ttatcatggt aaagatgtgg tttgatggtt caaatatact aagcatttta 780  
ttagaagttg ttcaattata ttaagcatal tctaggcaac tagaaatgat catgtgattt 840  
tacttctctg gcctattatc acaataaatt atgttagtag tttctcaata ctggattatt 900  
tctgcatgag atgtatcctg ttaataaatg gtggtttttc cccttttttt cttgtaacaa 960  
tgttgaactc aatttcttac attttatttg ggattgcatt tatatttatg aataagattg 1020  
ggttgtagtt ttacattttt gaattctacc tttatcagct taaaaacctt gattggtaca 1080  
tagcataatga attgcctatt ctttgggggc tggagaaact caccataac attgtttagg 1140  
cctcaatctc ttttaaggag gatgagtaga agacaattct ctgaaaactt aaaaaacctt 1200  
tttctatggt tttactgtca cttcttgagt atcaatttaa aaaatcatat ttttaaagaa 1260  
aaacatgcat tttcagagaa ttttaaaatt tgttgtctat atataattat aattaaaaat 1320  
atttttctct gtatctctgg ttattgcttc tttctcattt ctggtccttt tagttacttt 1380  
tttcttttct tttattagac ttgccagtct ttttaaggaa ccagcacttg agtatttcat 1440  
cagttctatt ttttctattt gttataatat taatataact tttcatcttt aattccttcc 1500  
ttatttttaa tgtttatttt gttgctttat gaatgttttg tactaattga tggcttagtt 1560  
catttatttt cattttttaa ttttaataata ggacacgtaa gactataact ttgcctttgg 1620  
gcacagcttt gactgcatct caaaagtttt ggtatgtagt ctcttaattg ttgctattta 1680  
aaaataatgg attatattac tgtttttatt ttatttttga tgtattattt aggatagtat 1740  
tgtgaggttt ttgttatttg ttaatcctac tttcttttta ataaagaata aacttattaa 1800  
taaaaa 1806

<210> 121  
<211> 2614

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla21107

&lt;400&gt; 121

gggtccagat ttttccctt tataagctgt tttcacaggc actgctgttt gtttttctg 60  
aaccagtgtt ttcatctttc ctgtgtccag aaagttactt tatctgtgat cagttctgga 120  
gtaaaggatg tcatgtcata gtctgtgctc ttgccacgt tggaggagct cctagcataa 180  
tttaagctta atgtcaaaat gcttgggggtt gcaatctagg ttctgccatt tgctgggtgt 240  
gctgctttgg gtagagcagt tgtataattc aatgagatat tgaatggcta gcgctcgaca 300  
tatagtaata actcagtcaa aataattaat attttttatt atctggaagg gtgcagtggc 360  
tcattcctat aatcccagta ctttgagct gaggcagggt gactcactga ggtcagaagt 420  
tcaagaccag cctggccaac acgggtgaaac cccatctctg ctaataatac aaaaattagc 480  
cggatgtggt ggctgtgacc tgtagtccta gccactcagg aggctgaggc aagagaattg 540  
cttgaacctg ggaggcggag gttgcagtga gccaaagact tctagactgc actctagact 600  
gggcaacaga gtgagattca atctcaaaat aaattaataa ataaataata aaataaaaata 660  
aaataattag tattttctag cccgccactt acccagttag gtatcccagg actttgttag 720  
tagcaagtag catacaagaa aacaacagca gcaacaacag agttctgtga gcacacgagt 780  
taggaaaaca tcaggatgaa aagctcacat agactccttt atggcaggac ttagtctcta 840  
aaatgttaca taatgtgttt ttagagaag agtggataa acgctaatta ccaactatt 900  
tggccttaga accccttttg ttttaggggtg gcattggtag gagagtgatg ttccttagaa 960  
tcccattagg aaagaaattc cagggtgggtc cacttccctt aggaattcta aggtattctg 1020  
aggagcatca cgtctctat cctgccatcc ttgaaaacag tatttgaggc caggcacagt 1080  
ggctcatacc tgcagtccca ggactttggg aggccgaggt agacagatta cttgagggtca 1140  
ggagtctgag accagcctgg ccaatatggt gaaacctgt ttctactaaa aatacaaaaa 1200  
ttctctgggt gcggtggcac atgtctgtaa tcccagctac ttggggggct tagccaggag 1260  
agttgcttga acttgggagg tggaggttgc agtgagccaa aatcatgcca ctgcacttca 1320  
gcctgggcag cagagcaaga ctctgtcaat caatgtatca ataaggtctt gctaaagatg 1380  
ataaagcaaa ttagatgttg aacaacgtta gaagtgcagg ttcctctctg ctctctctg 1440  
cacgtgcact tctcaaagtc tgatctttga tacacctctg tcagcatcac ctggggaggg 1500  
gatgggtagg aacacagatc acagacacag ggcatcagaa tctcctgtct cagagcccag 1560  
gaatctgcat ggttgcaagt cttctgggta attttctagt aagctaaatt ccggaaacca 1620  
ctggactgga ccacctct ctgtagctat attgtgtggg cagaactgag gttgtgctc 1680  
cttccaaaaa ctctggtgac tttggaaaaa tggttgatga tggctcctca ccacctctct 1740  
gcctgcccc aagacctgga ggaggtgtgt atcttgggag aatgctggag gccttccctg 1800  
gctttcacag gccagcccgt catgcagagt ctctccagag accgctccct gccctccatg 1860  
gtcactgttg gagctatgtg tccctacgat ccctggtaat gtcctccag ggaaacctgt 1920  
gtgtgcgggt caggggagat tagttcgaaa tggagagaca cgtacttggg gccttgccaa 1980  
gtcgtcttgg agagagcatg gcgatgctt ggtttccatg gaaaccaggt gactgtaagc 2040  
tcaccttgg cccttgaaac agcctccagc ttctgggaac aactgcaagg ctgctgttta 2100  
ctatgagagg ggagagcagc cacagagaag agaaaaccaa ctgctgattg gaaaacaggc 2160  
tcagttgtct gttttgaact gcaagaaaag ttagaagagt gtcctaatcc aaagatacag 2220  
aaggtcagat gtggggcagg caactagccc actgtcccga tctgtattaa gagacaccac 2280  
catcaagggt gctccctct ctaggttttc tactcaaaaa gccttttttg gctttttgag 2340

tcgaaattta tgaacatcac aggettagac agtttttttg actgttcctt tattccctgc 2400  
 taaaatcgat attccatgat atccagacat tgccatgctg gcttcaattc ccactttgtg 2460  
 tgtgttcttc ctctttctca tatgtgagca gctgtggata gcaccgcgcc cccagttttg 2520  
 taaagtaagc tttccaaagt ggaaggatca ctgacagggc aggagttaa gaccaggctg 2580  
 ggcatcctag ggagaatcct gtctcttcca aaaa 2614

<210> 122

<211> 1779

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21367

<400> 122

aaaaaaaaagt tttcaggttc ctgtgtcttc ccgttgagtt gctcgtcca cggcatggag 60  
 gactaggaat caggagtcag tggccgtatg ctggaggctg gagccgcggg agcgcggtc 120  
 gcctcgtgc ggttggtggc agcgacggag ataggagtgc ggctggagcg atgtgccagg 180  
 tgggtccagt gccagcta at cactccctg ttggcagcac cgtgaacact gtgcacctgt 240  
 cttcagatgg cacttaaagc agagaagcct gctgtgtggc tgtgggagtc atcagagagg 300  
 tggcagtggg ggtttgttat cgacccaatc attacatcgc taccgaaggc tcatctggaa 360  
 cttctggact caagtgatct gcctgccttg gcctcccaaa gtgctgagat tatagggatc 420  
 atggcccaag taacaatgct cgccctggcc gttgaagatg aggagtcctc agcaggatgg 480  
 tgggtgacatt cctcatgtca gctcttgagt ccatgatggg gtttcacaat gttggtgagg 540  
 cttgtcttca actgctgagc tcaagtgate tgtctgcctt ggactcccaa attgctggga 600  
 ttgcaggatt gttttagagt gtggatagtg aagcaagaat gtacgtcat ttactcaagg 660  
 tgttgaagaa gaagaaaagg ttgcagagat gcattaaata aagtctaca cccagggaaa 720  
 gctttacaaa aaccacaga gtaactgta ccatatgaga agatgctaca agaccagtca 780  
 gctttgatag tacaggggct tccagaaggt gttgccttta aacaccctga gaattactat 840  
 cttgcaaccc tgaatggat tttggagaac acagccggga tttcattcat tattaagaga 900  
 gatgggggtt cctcatattg tccaggctgg tgtcacactc cttggctcaa gcaatccacc 960  
 tgcctaggct tccaaagtg cttggattat aggcatttcc ctggaagtgg cagctgtgac 1020  
 agtaaaggaa gaatcagaag atcctgatta tgatttatat cacattcaag gagccagctg 1080  
 aggagggtgc atgcaactg ctgcccagc cctccccttc taaggaaact ccacacctgc 1140  
 cctgtcttcc tgctacagtc tctgagaaaa gccctttcat ctgtcaagaa ctacaaaagt 1200  
 cattctttaa gcagtgtctaa ataaacaatg aaacagacac aaagttaaag ttacctgatc 1260  
 caaaaaggag tgaagcctag accccagccc actgactcag tctctaagtc ccctcactca 1320  
 aatcttcaat caacagtga gatggctgtg agctcttctg attccagatg acaatactcc 1380  
 tgcctttaat tcttgatat gtttaattat gtaagtaa ttaataataa aatcattgca 1440  
 ttagagtctg tggtttttat acaagattca gtgtgagatc aatgtcatac ttccaatttg 1500  
 tcacacttat agagaactga gaagagtcac attattttaa atcttagcaa atgtgcataa 1560  
 ttcttttga taatttttaa gtgataggat tggatcacat atgatgcaat ttcctgggtc 1620  
 tcttttgtt ttagatgtt ttatctctcg tattgtggat ctcatattta tgtgaataat 1680  
 tatcagaaga ttttatttct attatgcata tttagtataa aatgatcata cagtgaagag 1740  
 tgtgtaaaat caaaataaaa tgccattcat caccaaaaa 1779

<210> 123  
<211> 2942  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nb1a21790

<400> 123

```
gatatatttgt tacaagatta tcctagtttt tagagagctc aataatacta acacctcatg 60
tatttcaggc tgcttcaggt ctaattcaac cataaattta aatggttgaa attctgatta 120
attgacaagt taagtiggga ggtaaggaac aactaggata ccatctacta tgggtgtag 180
gcaagtgtc cagattgtga tttctttgag tatctggggt ctaggggaat aatcactgtg 240
cctgggtaag tcaggaagag atcataaatg acaaagaagt cacccttgta aggattgagt 300
atgtattagc agagatggat tcatctgaaa atggtactag atggtgggtg cctgcatcag 360
tattatttca gtatatittc acatcaagat agttgagtaa gaaatgtcat gtgattaaat 420
ccaagaggta tttattgacc tgtaatttgc cagacactgc taatcccttg tgctacaaaa 480
atgagtaaga accacttatt ggtgcacaca gtctgtggaa gaaacagaac tgcaaacctg 540
tcattctaaa ataataggta ctaagggact gaatcagtag aagttcttct tgtgtacacc 600
agagaaaagt gacaattgag ttgatgcttg aaaagtgaca attgagttga tgcttgaaaa 660
gtgacataat ggaaaagtga caattttgaa gaatcactaa attggggagt aaatggaaag 720
agaaggatta ataatagctt tagtgaaaaa agaggataaa gtgaagttga tttgtttatg 780
attttagata gggataggag ccaatagaga acaaagatt ggaaatccag agaagagagt 840
aattggtaat gcagtgttca acaggagtca ggaggagtg gaattaggag tactggtttg 900
aagaagagag gaattatctt ctgagactgg agagaagaga gtaaatattt cattctcaa 960
aactccttgg gataattggg ttttttcttg tgcccacttt ttaagagtaa cacttgaagt 1020
aaatcttttt gtttagtaag gcaactaaggg aaaagtcaaa ttatgaacct tcagaggaaa 1080
tagaatgatg acctaactct gcatattctt aggggtagag aagatgaagt ccatgtcaca 1140
gcttgacagt ttgtcaagac ggtggaagcc ttcagagatg aagttggatc ccttcagga 1200
ggttgtattg gaaagcagta gtgtggacga attgcgagag aagcttagtg aaatcagtgg 1260
gattcctttg gatgatattg aatttgctaa gggtagagga acatttcctt gtgatatttc 1320
tgtccttgat attcatcagg atttagactg gaatcctaaa gtttctacct tgaatgtctg 1380
gcctctttat atctgtgatg atggtgcggt catattttat agggataaaa cagaagaatt 1440
aatggaattg acagatgagc aaagaaatga actgatgaaa aaagaaagca gtcgactcca 1500
gaagactgga catcgtgtaa catactcacc tcgtaaagag aaagcactaa aaatatactt 1560
ggatggagca ccaaataaag atctgactca agactgactc tgatagtgtg gcattttccc 1620
tgggggagtt ttggttttaa ttagatggtt cactaccact ggtagtgcc attttggccg 1680
gacatggttg gggtaacca gtgacaccag cactgattgg actgccctac accaatcaga 1740
agctcagtgc ccaatgggcc actgttttga ctcggaatca tgtgtgtcac tatagtcaaa 1800
tgtactgtaa agtgaaaagg gatgtgcaaa aaaataaaaa aaacaacaa aaaaagctaa 1860
ccttctatta gaaaagggga caggggaatg agtaacttc ttttattgcg gacaaatgtg 1920
cacatagccg ctagtaaaac tagcctcaaa caggatgtc atagcttaat aataaaagct 1980
gtgcaaaggc catgaatgaa tgaattttct gtttatttca ctgatgcaca cattacctca 2040
ttgacaattc agaagtaaat ccaacgtgtg ttgactcttg gaaagcagca aaaacaggag 2100
```



ctgaagaaaa gaaattcttg gaaccagccg taaccagta aggaattgtg aagttgtgtt 2160  
tttattttgt ttcatTTTTt gcagagtatt aagaacatta ttctggaaca tcagaacgtt 2220  
tcccttagac cgatcccagc aggtggcagc tcagattgct gcagtgtgtt aattataact 2280  
gattgtactt aagttatgga ttagagaat atgtttcatt catttattca gcatgtaaat 2340  
aaaattgatc ctgttgagtt atcataattg cagttcaact atctgccatg attattcttt 2400  
tcacgtatca ttcatctgt acatttgtgt acattgagaa gtatagcaat ctatgtaaat 2460

gtaatcctca gtgaggttcc tcagtgttag gtcccatagg attgtcgttg cccttgtaa 2520  
tgaggtttct ctgttcagcg gcttcaattt tttctcttt gtacatctag tttgaagat 2580  
ttacttcaag ttggaatctt ctagaatgct tgaagtcca gttttaattt ttagagtcaa 2640  
ttttagtta catgtagttt aacttttggg aaacgtctta acattgttct gaataaactt 2700  
gctaagtagg tcaggtcatg gtacagactg atgcagtcaa catgatttca ttgcagagtt 2760  
tattagtatc agcaagtttt tgctttgcta aataaaagta cccaatgaac acaattctac 2820  
ataaattttg acataccatc taatttataa aaatcaataa aaaaggtttt ggtaaaactt 2880  
tttcatgccca gatgctgttt acaacaatga acatgccaat aaaacatttg ttcatcaaa 2940  
aa 2942

<210> 124

<211> 1679

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22253

<400> 124

ccgtttgatg ttcaggagac tggcgaaggc tcagcaggag cttcaggagc cccagagaag 60  
gtccctgaaa atgatggcta catggagccc tatgaggctc aaaagatgat ggccgagatc 120  
cggggctcca aggagacagc aactcagccc ttgcctctgt atgacacacc ctatgagcca 180  
gaggaggatg gggccacccc ggaaggtgag ggggccccct ggccccggga gtccgcctg 240  
ttagaggatg atgagaggcc cctgaggag tatgaccagc cctgggagtg gaagaaggag 300  
cggatttcca aagcctttgc agttgacatt aaggatcatc aagacctacc ttggcctcca 360  
cctgtgggac agctgggacag cagccccctc ctgcctgatg gggacaggga catctccggt 420  
ccagcctcgc cctccctga gccagcctg gaggacagca gcgccagtt tgaaggaccg 480  
gagaagagct gcctgtcacc tggccgggag gagaaggggc ggctacctcc ccgactctct 540  
gcagggaacc ccaagtcagc caaaccccta agcatggagc ccagcagccc cctgggggag 600  
tggacagatc cagcactgcc tctggaaaac caggctctgt atcacggggc catcagccga 660  
accgacgccg agaacctgct ccggctgtgc aaagaggcca gctacctggt gcgcaacagt 720  
gagaccagca agaattgactt ctccctctcc ctcaagagca gccagggatt catgcacatg 780  
aagctgtccc gaaccaagga acacaaatat gtgtgggccc agaacagccc gcccttcagc 840  
agcgtccctg aaattgtgca ccactatgcc agccgcaagc taccatttaa gggagccgaa 900  
cacatgtccc tgcctaccc tgtggccatc cggactcttt agatgtgaag ccagggcact 960  
gtgatagacc tgtaccagc cctgtgccc tcacctggct gagggctgtg gctcttgcca 1020  
gggacgtgat ctttcaaacc tttcttctcc tgggatccag tagaagctgg agattcctta 1080  
atttattcta aagggaagg gctcctgggg ccttgagta aggggttgc tggagctggg 1140

gaaagaggaa tccctggaga gaaaggatag cccctggagg aagggggttc cagagctact 1200  
gggatggtag ggagtttcag actggcagct cgggtcctt tccgacctta gggcagaggt 1260  
ggtgacctcc accaccacca cctctctccc actgggtccg tgcgaggtag tgcagaattc 1320  
ggcccccttg ggccgcttac cacctctctg cctccgtccc cgacttccac cccagaccgt 1380  
cggagggttc cgccagagt ctggttaagag gtttggggaa gacaggcccc tgggaagcag 1440  
ccggcttttg ggggtgggga gagaaggga ggggctcggg cagagggaac tgtgcagtcc 1500  
ccaggccgcc cgggtccgg gccagaggca ataaataaac ccgctcctgc cgggcacagc 1560  
cgcgcccgc cctccgggcg cgtccccggg ctgacggggg agggagcgga gaagcgagcg 1620  
cagattctgc gtataaatca gctctggagc agacacagcc cggctgtgaa aagcaaaaa 1679

<210> 125

<211> 3886

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22355

<400> 125

acaggaagga accagctgat tccatagtct tctgtctgtc ttctcgtcgc agggtagatt 60  
ctctgtccct ttctctgtct ctcttctctc tggagccgtg gaggcagctg ggcgtgggtg 120  
ccttccccgt ggaaagccgc tggcaggag tctacagccc ctccgggac ttgtgtgtg 180  
ctggctgccc caggacactg caggaggccc tgcgtggcct cgacgtgcag agctccaggg 240  
agctgcgtag gtctcaggat tacctgtcct gcgagaggac ccaccctgag gacagtgtgg 300  
gcagtatgga agacatcctg gaggagctgc tgcagcaccg ggagcccaag gccctgcagc 360  
tgtacctcag gaaggctctg agcaactcac tgcacccctt gggaaagctg ctccggacac 420  
tgtatgctgac cttccaggct acctacgcag gtgtcggggc caacaagcac ctgcaggagc 480  
tggcccagga ggaggtgaag cagcatgccc aggaactctg ggctgcctac aggggtctgc 540  
tgcgagttgc cttagagcgc aagggccagg cctggaggga ggatgaagac acagagacaa 600  
ggtgactggc gcaggtctcc ttggggcctg ccgtgtccag ggaggcctca tgcgtctgct 660  
cctaggacct cccttgggga aagaggtgct tctggggaag tgctgggcat tcaacttatt 720  
gaccaaakat tgtgcattga tggtttggg attagaatga cccatgacct ctgttctgtg 780  
aggaaccagg gagggggcac tgctacaatg cattgaatgc atctttgttc taaatgtatg 840  
atcccaatct catctttcgc atgcagaagg tgagtagctc cccgaggcac cctcctctcc 900  
ctgcacacag atggggaaac cgagggtggt tagggatgag cctgagggta tacaggagtt 960  
aggtgggcat gaaatttgtt tccccagtc cctggagcaa accttacaat ttgcctttag 1020  
attctagacc tgaaagtgtt cctgatcaga gaggccttcc tgcactgcc ttgcaggagg 1080  
caagggaat ggggttagac attaggagg attccccgcc cggagtccca gcacagcaaa 1140  
ccaggaggtg gaactgaatc agcctggaat ggctgtgag agctcagctg caagttgtg 1200  
gtccatctgg ggccctggtt ttgctttcag tcaaatgggg atccaactcc tgccccacct 1260  
gccatcttgg ttgtcaaagt caaaggagg aatgaagtta tgaattgaat tgggcaaatg 1320  
atgactgaga acaggcttgg aaaaggtttt ctggggagga ggaggctgga ggccaggaca 1380  
ctgtttgttg tggaactagg agctctttga gacgagactc caagtagtaa tcccagacct 1440  
cacctgtctc atcccaacct gttccggtct ccccatcagg gacctccagg tgcattgatt 1500  
ggtgctgccc ctcatgctgc ccagcttcta ctgagagctc ttcacgtct acctgtgct 1560

tcatgagcgg gaggacagct tctacagcca gggcattgcc aacttgagcc tctttcctga 1620  
 taccacactg ctcgagtacc tggatgtgca gaagcacttg tggccctca aggacctcac 1680  
 gctgacgagc aatcagaggt actccctggg cagggacaag tgtttcctgt cagccaccga 1740  
 gtgcctgcag aagatcatga ccacgggtgga ccacggggag aagctggagg tgctggagag 1800  
 gacatacggg gaaattgagg gcaccgtgtc gagggtattg ggccgggagt acaagctgcc 1860  
 catggacgac ctgctgccac ttctcatcta cgtgggtgtc cgcgcccga ttcagcacct 1920  
 gggagccgag atccacctga tccgtgacat gatggacccc aaccacacag gaggcctgta 1980  
 tgacttcctg ctacagccc tggagtccctg ttacgagcac atccagaaag aagacatgag 2040  
 gctgacccgc ttacctggcc actggcactc caggagctc tggtagcctg gcctttcctg 2100  
 gacagactga agagctgagc agggcactgc cagcctgtcc ctattaccc aaggcaaggg 2160  
 gcaggacagg ccctcagaag cagctcttgg aggagatgag cattttgttt tgcacaggaa 2220  
 gatgctgctg ctgccctgac tgggatgagg gtgagggtg acgggtgtgg ccctggatgt 2280  
 ggtggttttc cttggccac tagcccatct tcaatgaccc ctaaatctgc agcagctcac 2340  
 aggttggggg tgaggagtcc ctggcttctc ttagcctgag ctttctccc aagtccaga 2400  
 gcctctccgg gcctcagtgc tgccatctgt acaatgggtg agtgagtacg ctgtaaagga 2460  
 ccttccattc attttctga attccagagt cttttggaa aactgacttt agtctgctgg 2520  
 gctgtattga cctctggcag gctcgaagcc tcaactggta tgcagtcaac aggatggggc 2580  
 tggagatccg tgaactgcag gccacgtacc catgacgtaa acggcggcac tggagcaagc 2640  
 tggggcgggg ggtgggtaaa ccctcactgc cagcaggccc caagtggctt gtaaatcatt 2700  
 ctctgtgac gtctgtgggc ctgctggggg acaacagggg ccatgacat ctacctgggc 2760  
 cctgaccaat aaaccctcag acccaggacc caggacctg ctgtagtggg ggagcaggag 2820  
 tacctttggg aggggaggac tttattttaa cagtggttct agtgtgggac caagagaggc 2880  
 aggagctggg tcttggggca gctttattcc tgttgggctt cagtttctct tccccacaca 2940  
 gtttatcttc cgtcacattg tgccgggtga cgtgcacggt ctccctctgc cctagcagga 3000  
 gatgcatgat gacaggcagt gtgatgtgtt ctgaaagtgt ccagggcaaa gcgtaggagg 3060  
 aggggtggatt tgtgcagggt gcagctctgg agaagaagct ggatcactct tgggtccatt 3120  
 ccctaggccc tgagcaagtc aggtccttgg ctctgggtgt ggctcccca aacgaagtac 3180  
 tgacttcagc ctgtgagggg aggggtgagg gaggctctgg aaagcccagc cacacctgag 3240  
 tccctggcag tagccttggg gcagagggca ccgcagagt ccagagatg atgtgggcag 3300  
 tgggcagaga gagccttggc gcctctgttt gccaccactt cccaggaag gaggacagc 3360  
 atttctctgg ctggttccac taaatgtgcc agcccaaatg cagggcattg gctctgggtc 3420  
 tgccgggagc ctgtgacacc cccaggaagg gggtggaact gaggaagagc gaggatatgc 3480  
 aggcactcat gcttaccggg actggggcag ctactagga ttctatcctt tccaatcggc 3540  
 atcagccagc tcttgtcccc tgataagtga ggacagcctg accctggcct caaatgcagc 3600  
 catccctgag ttcatgcgat gctgacggga cccagcaca cttccctgcc tcctttgaga 3660  
 tctgcgagcc ctgtctgcag ttcagattca acaaggccct ctgccaccc tctcactagg 3720  
 cctcacccaa caccagtggg actggagcct ctggctgggc acagtggctc actttgggag 3780  
 gctgaggcag gaaggctgct ggaaactgag agttcaagac cagcctgggc aacatagtga 3840  
 gaccctgtct ctacaaatac aaaataaaat aattagctgg gaaaaa 3886

<210> 126

<211> 2024

<212> DNA

<213> Homo sapiens

&lt;220&gt;

&lt;223&gt; nb1a22832

&lt;400&gt; 126

agcgcgggca cacggcgggc agagcgccga ggcggtacct tcagcctgca atgagaggaa 60  
ccccgggagag ccccggggag ccagcgaaga gcttggctgc tgcgtccagg gctgctgctg 120  
ccgcccgggc tgcttgaaac tcctcaaagt tgagagccgg ctagagggtg ccgcccggc 180  
ggagccggag ggaaggaag tcggaagggt caagagtac agacacggac agacggacgc 240  
gcagaccttc ggaaggcact gcgtaggcag cctccccgga gccacgagg ctccccagca 300  
ccgttactg gtgggaggct gagccgggtg aaaagacacc gggaagagac tcagaggcga 360  
ccataatgtc gttacgtgta cacactctgc ccacctgct tggagccgtc gtcagaccgg 420  
gctgcaggga gctgctgtgt ttgctgatga tcacagtac tgtgggccct ggtgcctctg 480  
gggtgtgccc caccgcttgc atctgtgcca ctgacatcgt cagctgcacc aacaaaaacc 540  
tgtccaaggt gcctgggaac cttttcagac tgattaagag actggacctg agttataaca 600  
gaattgggct tctggattct gagtggattc cagtatcgtt tgcaaagctg aacaccctaa 660  
ttcttctgca taacaacatc accagcattt ccacgggcag tttttccaca actccaaatt 720  
tgaagtgtct tgacttatcg tccaataagc tgaagacggt gaaaaatgct gtattccaag 780  
agttgaagg tctggaagtg cttctgcttt acaacaatca catatcctat ctcgatcctt 840  
cagcgtttgg agggctctcc cagttgcaga aactctactt aagtggaaat tttctcacac 900  
agtttccgat ggatttgtat gtiggaagg tcaagctggc agaactgatg tttttagatg 960  
tttcttataa ccgaattcct tccatgcaa tgcaccacat aaatttagtg ccaggaaaac 1020  
agctgagagg catctacctt catggaaacc catttgtctg tgactgttcc ctgtactcct 1080  
tgctggtctt ttggtatcgt aggcacttta gctcagtcat ggattttaag aacgattaca 1140  
cctgtcgcct gtggtctgac tccaggcact cgcgtcagg acttctgctc caggatagct 1200  
ttatgaattg ctctgacagc atcatcaatg gttcctttcg tgcgttggc tttattcatg 1260  
aggctcagg t cggggaaaga ctgatggtcc actgtgacag caagacagg aatgcaaata 1320  
cggatttcat ctgggtgggt ccagataaca gactgctaga gccggataaa gagatggaaa 1380  
acttttacgt gtttcacaat ggaagtctgg ttatagaaag ccctcgtttt gaggatgctg 1440  
gagtgtattc ttgtatcgca atgaataagc aacgtctgtt aaatgaaact gtggacgtca 1500  
caataaatgt gagcaatttc actgtaagca gatcccatgc tcatgaggca tttaacacag 1560  
cttttaccac tcttctgct tgcgtggcca gtatcgtttt ggtacttttg tacctctatc 1620  
tgactccatg cccctgcaag tgtaaaacca agagacagaa aaatatgcta caccaaagca 1680  
atgccattc atcgattctc agtcctggcc ccgctagtga tgcctccgct gatgaacgga 1740  
aggcaggtgc aggtaaaaga gtggtgtttt tggaaccctt gaaggatact gcagcagggc 1800  
agaacgggaa agtcaggctc tttcccagcg aggcagtcat agctgagggc atcctaaagt 1860  
ccacgagggg gaaatctgac tcagattcag tcaattcagt gttttctgac acacctttg 1920  
tggcgtccac ttaatttctg cctatatctg tatgatgtca taatttaatc tgttcatatt 1980  
taactttgtg tgtggtctgc aaaataaaca gcaggacaga aaaa 2024

&lt;210&gt; 127

&lt;211&gt; 2106

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla23755

&lt;400&gt; 127

tttctctgat caaaattgtg gctgttttcc ttatgaacca taatataatc atttgtgtga 60  
tgtacattgt gccatttttg atgactaaat gtctatattt ctgccattcc tgtaagagag 120  
ggagtttttt actgatagta gcaaagtgtc acttcagtca aacttgggtg ttcagtggta 180  
aaccatatag tatttagact ggtaaaaata gtttgcacac aggaatagcc tctgattttt 240  
agctctcttg taatccaagt atcattgttc atggaattct ctaggtcatt tttattgtgt 300  
tgttctaaca agacagatta ttgctacaac aatagttaca agatatttct aaaatatect 360  
ttgattttta ctctaagtat ggtagagtaa gaggctaaac aagaagctgt ttccttgaag 420  
acattgcttt cagtcacat acatgtctaa ataatttagc ttatcattca tictatgtag 480  
gaatgagata agaaaggata tgatggcagg aaaagaaatg ctattcattt tttatacttt 540  
agttttattt tcttaggata tatatcctat atatatatat tttttaaagc actaatttat 600  
tgcagtcctt attttagaaa aatgtgaagc atttttttct ccctaaaaat gaatatattt 660  
agatgacaag tctttagtgc tggtagagga actaattgat ttgtactat agtaggaaag 720  
tgtttatatg tttcaccaga aataaaatat gtagggtttg tatgtaatct tctgtgttta 780  
tcctatgttg atttacctta aatttgaac atacatatcc acataaatat tcatgacttt 840  
cttatatttc attaaaatgt tttatggctt cttaaaatca tcaactgtgct tctaaatatt 900  
tttacgtaaa atcattgtat aatgctatac tgtgatatac atgaaagttt atcttgaaca 960  
gtgctcttta acaatattaa atttaaattt atcttggttt tgctatgctt atgggtaatt 1020  
catagaaaac agaaaaaata ctgttcccaa aaggcagtta tatatttcag tttaatatca 1080  
cctataagta tgagaaaggt ttccatgtct cctaccctc actgcactta ggaaaattct 1140  
tatttatgaa taaagtaaga taagtaaate taattgccta gtcgtttttt taacacatat 1200  
acatgcaatg tatctggatg aatagaaggc tgaattgaag ctttctttat atttaagagg 1260  
taaaaagaaa tattaatact tttaaaatat actaacaacc aaaaagtgtt cagaattttg 1320  
ctataataat aatttgtatt aaaatagtac ctagaaaaat tcagtctatg gaataggtaa 1380  
aattttaaaa ttttaatttg ctctcagagt tctgtctgat aaaataattg aactataatt 1440  
ggcatgatga atattccag gttttacttc agtatataaa ttaactctc agccacatgg 1500  
gctttccaga cttttcaata catatgatgt tgcaggaatt gcaatatttg caaacatgtg 1560  
ccacaacagt gttcttggtg atgtttctaa aacagttttt attctattaa tgttaaattt 1620  
tctaacataa acatttaatt gattaatgta aaattttagg aaggaacatc ttttaatttc 1680  
aatatgagat gggttgaacc tttaaagtag tacatatttg atttttttta aaaggcaata 1740  
tttttttttc taggaaaact attcattatg gttatttaac tgcattgttt ttaaattttt 1800  
ccctcttgga acaacatgta ctggggccta tcaaagggtg gagggtgga ggaggagag 1860  
gaacaggaaa aataactaat gggtagtagg cttaatacct gggtagtgaa ataacttgta 1920  
taataaatcc ccatgacaca aaagtttacc tgtgtaacaa acctgcatat gtaccctaa 1980  
acttaaattc ttccctcttt ttgtcttggg cacaagtttt tgggatattg aaaagtttat 2040  
tgtatccctt ttgaattttc ttctaagatg aactttttta ataaaagata ttactgcttt 2100  
taaaaa 2106

&lt;210&gt; 128

&lt;211&gt; 2147

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla24549

&lt;400&gt; 128

aagtcacggg tgtggaattt ggagcaatta taccatcat ctctagaag actcccatat 60  
caaggggctt ctggtgacct ataagagttc ccctttcttt ctgtcacctc atgtaatgtt 120  
ctcacgcggg tggggctttc agtttttcaa aaggcatctt acatatgtga atcatagagc 180  
agaccctgcc agtagtgggc tgttgccctc tggaaactga aggctgtgaa tgccaatttt 240  
cagcctcctg gagacctggc agttttgggg gaagacccca gggtagacac cagtgttcct 300  
ctaagtgtgc ccaccctgg actggggctt ggggcctggg gctggggcta tgtctgagt 360  
aggctgccac acatccacag ccaggcctac cttttgggca gtgctgggac tgtcgatggg 420  
accagtatgt cccggggcct gccacatctc cgtctcaggg ccctctccag ctctggattt 480  
atcccaaacc ccatggagcc caggtagacc ctcatgaact accaatagaa gattcgattt 540  
gacggtttgt ggctagggc taaattagtc actgccccca ttaaaaatac agcggggggg 600  
ttaagagctt ttacgccat gtgggaatca gcagcgaagc cggtgatgc ctgggtaag 660  
gagagaggcg gcctagggga ccgtgaggta atgaggttta tggcggtagc aaggcagcca 720  
gggaacccca ccgactccc cctcaccocg gccgcattgt tctccggctg gctctgtccc 780  
tgctgctacg gctgagagcc cctcgtgact ttgtgtgggg agggggctgg cagtggggac 840  
cctgaggccc ttcctgggac tggcattctt taccatcagg tggattagg gttggggagc 900  
agtgtagggt tataaacctg tgcctcggag aactactaa cccctccag aggaaaggtc 960  
tggagctggg atgagacct tgcctttcaa ctgtgagggg ccttagaggg tctctgggag 1020  
gcttgtatga agtgatgcct gacaaaggc tgcacacaga gacctgtaag cagcatggtc 1080  
atcaatgatg gtgccaggca tcctgcagga gggcacctt tcagccagga gggcgcatg 1140  
gaatcagcct ctattttgga ttggccttg gggagtggg gaggtgactg aaagcctaag 1200  
gttcattgct gctgtattta gatgtacaaa ttgtcagttt ctacgggctc tctgggcaga 1260  
ggaattttgc ccaggctggg aaatggacca ggaccaggac agggcacagg cccctgtcat 1320  
ggaacacctg ccagagtgc ccagaagcag gcaggtaagg gtttcagtct cagtggagaa 1380  
actgtcatgg gagaaatctt ctcgagttcc ccagccttaa agaagctcc ttttaaattc 1440  
acagtttgtt aatattgaac tttcacctg ttttcttcc ctctaagggt gtgtgttcct 1500  
agggatggaa cctgtacct taaatattca gtaaatagga ccaaaactca aatccatccc 1560  
ttcctctact catccattca gcaagtattt actgagctgc cccaggtgc caggcactgc 1620  
acagggcact ggggataagg agatgaccag cagatgtggg ccctggcctc atggaggcca 1680  
cagtggcaca ggcaagcatg ccagtaaatg catagccaca cctggtcagt agtgccgtga 1740  
tggcaaagcc agaagctgcc agggattaat ggagggaccc gtgtatgaga cacaggggtg 1800  
cattaaggaa ggccttgctg aggcaggggc ttgagacctg aagaaataag ggaggtgggc 1860  
agtccaagag cagtgggaag agaacactgc aaatgcagaa gccgtgagct ggaaacgagc 1920  
cagaagtacc cttagagagc tgtattccta tggagtttca attctaggtg gcttaaaaca 1980  
atccagaga agttcagaat ctgtccaag atcataccat tcaggataga cttgcgacta 2040  
taacttgggt gcctcacctt ccagcctggg gtgtctgact ccattgttaa ttttattata 2100  
acaatcatga tgacaacgat gaataaagtg aaattgtact gtaaaaa 2147

&lt;210&gt; 129

&lt;211&gt; 2353

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nb1a20084

&lt;400&gt; 129

aagcagagtg aggactccct ggccagtggt ctctaccatc tcttctgcct accttctttt 60  
ctctcatgga agtaagaaaa gaatccattt catcaaaggt tgaacattcc acttcatccc 120  
tgaattctct cttgctttga gttcttaggt acatctatat tagatatcac ttctcctct 180  
gcatcccaaa tgcccttttc cctcctcagc atacctgac ctcgtcctt gctgacctt 240  
gtatgtgtgt gttttctccc ttgatgacat atccctcttc agctattgct ctatttatat 300  
tcagaatccc aggcaagcaa cataaataga tgtctccaag gagtaagtga ttaattagc 360  
ttgaagtatt atatatattt tcacacacac agacataaac atatatatgt atgtatgcat 420  
ataaaacaaa taagataaat aactggaaaa tatatgcaat gaagtcagtg aattagcaga 480  
tgagataaac atcccagatt ggtatgggtat gtacgggtac ggtgtgggtat ggtatgggtt 540  
ggtaaccacaa ggtctagtgt ttagagctgg ctctgccagt cactatccct ttgatactga 600  
tcaaatcata caaaatcagt ttcttcatcc ataataaagc cttcccttgt tactcagagt 660  
tgctgttcca gtcaaaaata aaatgttaat ttatgatata gaccttgata agctgtatga 720  
accttacatg atactaatgt agtaagatgc accacgggtc attcagataa gtgtcccagt 780  
gagtcctcag ttttcacaaa gtcatttcct atccccagtt ttgtttattt gtgcacctct 840  
gcatttacct agaacaagaa ttgttatatt ctaagtaatt gccaagaagt atggtaacaa 900  
attcactact acttgattct tcagtggaga aaattatata catatatata tatatagatg 960  
cttgcctaaa tgatatgcca ttcttcata cttttaaata ctgtaacttg tgttattgaa 1020  
ttaagccagc cagtcaaaag ctggaaatta aacatagtat ttctctatga aatatattt 1080  
ttaacattat aaaataaaat ttggaataaa agcattatgt atatatatat atatatatat 1140  
acatatatat atatactcat aactcttcat tcatttttgt gaatcagttc cattcgtagt 1200  
tttattgtac ttccaaatct tcattttctt ttggatcatt ttctttgccc agcattacgt 1260  
gtgtgtatgt gtgtgtatgt gtgttttaaa agggccataa gaggaaaaca gcaagaagtc 1320  
tgtctcctaa ctttgaaacc taaattttag ttttctttca cacaggaagt catcttgttg 1380  
atctaataat attatgaagt tattctcttt ttgatggaca tttaggaatg tttgatgtt 1440  
tcgtacaata attcaagttg caagaaataa gcacacacat tttgcaagta catctatggg 1500  
atatgttcta aaaaattaaa gtgcattctt tgtcccttaa cctatgatac gggcattctt 1560  
tattttgata gatgctgcag aattgtcttc taataagtca taggaattta cgttttcagt 1620  
taaaatgtat aacagttctt gttatataaa atgtataaca gaaaggactt ttgatttcta 1680  
tccatctgaa tgatgaaaaa tagtaagtta tttattaaat tattattacc ttcacatatg 1740  
tatagtggaa cactgagcat atgtttaaaa gctacttgag tttttaaaat ctgtaatctg 1800  
tgctttactc attttcttta ttggctgttg gttatttttt actgattttt gatgcccta 1860  
tcttgtttaag aaaataatat ttttataata tatcacattt atcacaagtt actgtttatc 1920  
tttgagtttt ctatttgaat ttgacatac acaaatggct catatttact ctttttatca 1980  
gcagtgtctt tgtagttcc tggatttggg atatgcttag aaaagtttat cctaaacaaa 2040  
gacttgtgta cttttaattt attgtcatgt ttaaactggt gctaaatctg gaatttatc 2100  
tggagtaaga agtgaagtag agttctaaat ttactttgat ttgttttgt tcttattgtt 2160  
gtttttcttc cagatttgtt atctagttgt ataaaaacca atgattaaaa aaaaaagttt 2220  
tttcttgctg ggcaaggttg ctacgactg taatcccagc actttttggg aggccggggc 2280  
aggtggatca cttgaggtca ggagttcaag acaagccttg ccaataggtg aaaccccatc 2340  
tctactttaa aaa 2353

&lt;210&gt; 130

&lt;211&gt; 2194

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla21081

&lt;400&gt; 130

aaatttctca acaccacagt cagctaagtc acctactgcc accttcgaaa aacacggaga 60  
gcacctaccc agaggagaag gtagatttgg agtaagccgc cgtcgacata attcctctga 120  
tggttttttt aacaatggtc ccctacgaac tgcaggagat tcttggcacc agccctccct 180  
gttccgccat gattctgttg actctgggtg ctctaaggga gcatatgctg gaatcacagg 240  
gaacccatct ggttggcata gctcttcccg aggtcatgat ggcatgagcc aacgtagtgg 300  
aggtggcaca gggaaccatc gccatiggaa tggcagcttc cactcccgga aagggtgtgc 360  
ttttcaggaa aagccaccta tggagattag ggaagaaaag aaagaagaca aggtggaaaa 420  
gttgacgttt gaagaggagg actttccttc cttgaatcca gaagctggca aacagcatca 480  
gccatgcaga cctattggga caccttctgg agtatgggaa aaccgccta gtgccaagca 540  
accctccaag atgctagtta tcaaaaaagt ttcaaagag gatcctgctg ctgccttctc 600  
tgctgcattc acctcaccag gatctacca tgcaaatggg aacaaattgt catccgtggg 660  
tccaagtgtc tataagaacc tggttcctaa gcctgtacca cctccttcca agcctaagc 720  
atggaaagct aacaggatgg agcacaagtc aggatccctt tcctctagcc gggagtctgc 780  
ttttaccagt ccaatctctg ttaccaaacc agtggtagtg gctagtgggtg cagctctgag 840  
ttctcccaaa gaggagcaac ctgtttgttg tatttgcca gagtccctcc agcaccaccc 900  
ctccaattga gatcagctcc tctcgtctga ccaagttgac ccgccgaacc accgacagga 960  
agagtgtgtt cctgaaaact ctgaaggatg accggaatgg agacttctca gagaatagag 1020  
actgtgacaa gctggaagat ttggaggaca acagcacacc tgaaccaaag gaaaatgggg 1080  
aggaaggctg tcatcaaaat ggtcttgccc tccctgtagt ggaagaaggg gaggttctct 1140  
cacactctct agaagcagag cacaggttat tgaaagctat gggttggcag gaatatcctg 1200  
aaaatgatga gaattgcctt cccctcacag aggatgagct caaagagttc cacatgaaga 1260  
cagagcagct gagaagaaat ggctttggaa agaattggctt cttgcagagc cgcagttcca 1320  
gtctgttctc cccttggaga agcacttgca aagcagagtt tgaggactca gacaccgaaa 1380  
ccagtagcag tgaaacatca gatgacgatg cctggaagta ggcatataaa tgctcacagt 1440  
taaactctgac ccagtaaaact ctgtgtgttt agggagtata caaaagaaat cgttcttttc 1500  
cttttcttat gttgttgaat acttcattca caagggaaat aatcatatcc caaagagaga 1560  
gcaattggct tgttttgctt ttgttattgt tcttccctgt tatctgcttt atagagagaa 1620  
gtttgtgttg tgggacagat tttttaaaca cactcacaca cacacacaca tacacacca 1680  
gtatatatgg ggcgatgcac aggtaggagc tggcagtgc ggggaagagga gacactggtc 1740  
tgcagcaaca gcttctacta ccagcccttg gggcactcac ccctgtgatc aagcaatcat 1800  
tgtcaatgac aaagtacta ttgaagttat aattgtatta aattaatgct aataatttgg 1860  
atattttatt ttatttttgg ctgctcgggt aactttagcc cttaccaag catatgtggg 1920  
tttttttggg tgtttttttt tgtttttttt ttctttttcc tttttgggta cagctgtaaa 1980  
atatttggat ataggaaatg ttgtgttatt cttgcagcct tgatattcag ggtggattgt 2040  
aaaatataaa tttttgtgag atttcaaaga ttaagattat ttgataaca ttatttacag 2100  
attttaaaag atgtggttat cacaagtctc gagggggaaa ctactgcata aaataactaa 2160



cttgggaataa atattttgca tcagtttggga aaaa

2194

<210> 131

<211> 4042

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21420

<400> 131

cgaacttggg atccgtctcc tctttcgcc cctccacttt gggagccccg ggctactctt 60  
tcacagcccc tgttgccctg tgatctgtag gtccttgggg acgcatagtt aagggtgccag 120  
gacatcctgg aagctgggaa atgggtgagta tacggagttc ggcatcccga gaggggagag 180  
caggctgtga aaccggcagg accggcctcc ccacggttag ctccgagtct cccgcagctt 240  
ggccctcagt cccctgtggc tgcaagatgg ccgctgggcc agcagcgagg acccccacgt 300  
cccgtccggc ccatccggtc ctgtccctgg gcagcgccct gctctgcgcc cacagccatg 360  
agtatttccc agattgttca gggaggcctg gtgggtcatc agggaaaaac cgcgactggg 420  
tgtttgcgtg ggaggagctg cggcccgtgg ggtccccagt ctctcttgtt aaaaattaac 480  
gggagtctat gttaaacgtt aaccagttta tctgaacaaa cagtgttgg tgaaatggaa 540  
agcaccacgc catgatttct ggtccaccag aggggcataa aggaaaggct ttcataagat 600  
gcatgagaaa gcagcccaaa ttcaaaaatt ggttccagtt atgtagtcac cttatttgaa 660  
ctatccagat ggaaatgtcc tggttacata ttacagaggtt aattgcatgt ttgccattgg 720  
ttaaacgtgc attttgtttc aggctaagat aatggtttat aggaaatgta tttagattag 780  
gttttagttt tttttttttt taacctatga acccaggaca ctagagccac tttagtctaa 840  
tttctgctc ttttaattatt ttaacactcc agaggaggac tggttttctc ctgtgttttt 900  
ttaatatatg gcaagtggaa cctctaactg accaccctgt ttttcagcct aactcaggct 960  
tgttgtaaaa ttatcagttc ccactttctt tgctgcattc tcaaatgcaa cacaggagaa 1020  
cagttttccc ttgcaaattc acaaagctgt taactatttg tcctttatta tacatttcat 1080  
taaagtttcc tattatttga tttctttcta ctctcccta cagttctgcc catatttgct 1140  
ttttatattt agaagcctcc cttttgggtg cataaatata tatagctata ttacttgac 1200  
aaattaacct ctattattat tgtatggtaa actcatttca tgcttgtgag agacattgct 1260  
agaaagtcta ttttgtctaa tttaagcata actaccattg aactcttttg gctattattt 1320  
gcatggaata tcattttcta tcctttcact attagcctat gctcttaatt cataattgag 1380  
tctcttgtaa gcagcatatt acgaggttta aaagtttcat ttatccactc tgtctgcttt 1440  
agtctctttt ggctgtttaga atatcacaga ctagtaatta ataaggaaca gaattttatt 1500  
tgactcatga ttctggaggc tgggaaggta aaagaacatg ttactggtat ctgttgaagg 1560  
tctagttgct ggataataac atggccaaag atgtgaggga gagagagctt tttttttttt 1620  
aatatataac agatccattc ttgttaaaat tagcccatc ccataataag aacattaatc 1680  
cattcatgag ggcagagtgc ttatagctta attaatTTTT aaaggttcca cctcttaatt 1740  
ctatcacatt ggtcatttta tcctaaattt tggagatgac attcagtcta cagaagtatc 1800  
tgtttagtag ataatttaatt ctttttattt gtaaggtagt gataggtaag cagttactat 1860  
tgtacatttg tagttttctg tccattttaa gtttgcctct ttttttctg gttctgtctt 1920  
tcctgtggta ttgttcattt ttgttgagac aaagttatgc tttcttgctc agactgaagt 1980  
tcagtggcat atcacagctc actgtagcct caatctcctg ggctcaagca atcctcccc 2040

cttagccacc caagtagctt ggactacttg gacacgtacc acaacaccca aggagcttat 2100  
 gattcttcca ccttggcctc caaaagtgtt ggaattataa gcaggagcca ctgtatccaa 2160  
 tgtgtaattt ttgttgtttg tgtatgcttt aattactttc tctttttctt tactatgttt 2220  
 tttttttccc cagtggttat catgagactt atgtaaaacc tcttgtattt taatagtcta 2280  
 gtttaagatg ataacaattt agagtattct gaatttcagt atgtatttac catttttagt 2340  
 gacatttata ctttagtatt tttcatattg ttagttagct tttcgtcata tcaatgtgaa 2400  
 gatttcttcc agaccatggc tggagaagga aagaagggtg gttttgcctg attcagggac 2460  
 tatagagaga accaagttct gcaggcctgt cacctaagtc tcagatgagt atgaattctc 2520  
 ttgtgttttt cacagatttt tgcagtggca ggaccaagt ccaatgagtc atagccaagt 2580  
 ctacagtaag atgtggtagt attctgtttt gaaccgagga ccatgattgg caagcttgcc 2640  
 acttgggtcaa gtgcttacc tctaaagatg tcttccttgg tctttgcctc cagctgggtg 2700  
 tcacaaactc tgaactggat tctaaggctt tcatgaatgc acttatgttt cctgtggcag 2760  
 ctgcattatg ttgtggggga tgtgcatgcc gaacctccca ttctgtcatc ttgcttatgt 2820  
 tactctcctt tatgtttcac tttctcaa atgaatgtcaag ctggtgattt ttagattcaa 2880  
 aaattctaaa ataaattgct caaatttcca cattatgtaa gctattaata aaatgtcttg 2940  
 tagtgcttac atatttatta aaatttttgg ttgtaatttt aagctcactg caggcagaaa 3000  
 ggaatcatta acatttatat tctttttttt tagtctgtat ctaaagatg gcatatttta 3060  
 attccagata ttactttat actgcagtaa tgctcgtcat attttcaaa atttatgttg 3120  
 ttcttttatt tggaaatata aggccttttt agctcctgaa atctatatta tagtcatata 3180  
 attttattat gttttgtggt aagaagtgca gcaacatatt gagaacataa taaaattatc 3240  
 ctgtattttt aatgattatt tattaaattc ctctcattag agcctgttat taatgattgt 3300  
 aatgtatttt ctgtataatt ttactgcaat ttattaaatt ctaatgactt aaatgtctg 3360  
 cttttcatga gtgcacacag ttgaatgctg tagatatcta aagaattatt ttctggccgg 3420  
 ttgtggtggc tcatgcctgt attcccagca ccttggggagg ccaaggcggg tggatcacga 3480  
 ggtcaggaga tcgagacaac cctgactaac atggtgaaac cccgtctcta ctaaataac 3540  
 aaaaaattag ccgggcatag tggcaggcgc ctgtatcccc agctactcag gaggcccagg 3600  
 ctggagtgcg gtagcacgat cacggctcac tgaagcctca aatccctagc ctttaagtgt 3660  
 ctacctatct cagcctcctg agtagctggg actaccgacc tgcaccacca agcctggcta 3720  
 atttttttaa atttttgtag aggttgagga gggaggggct ctgttgccca ggctagtctc 3780  
 gaactcctgg actcaagtga tccacctgcc tggcactgg gattacaagt gtgagccatc 3840  
 acaccagct tccctgagcc ttatacaga actcgcttt gagttagggt ctgttgata 3900  
 ttctagttag ggcattatat tgatttttta aattactatc attctgaatt aatacaaat 3960  
 tgtgtacat tcatacagt gaatagaact cagcaataaa aagtaatgag gggaggtggg 4020  
 gatggttaat ggttacaaa aa 4042

<210> 132

<211> 1898

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22452

<400> 132

aactataaag tgtggttctt gtatgataca ttattacagt tgtcttcttc cttaaagact 60

catcttgaat ataaagaaaa agacaatgta agttcagtc acagcatcgg gaacattaga 120  
catgctcagc gtagccctt cctgccaaca ttgtacctt tctcctccg ggttgatgg 180  
gcaactaactc gtcctcagtc ctgcagctag atctgcaact ttgcttaatg atgcaggta 240  
aaattgaaat agaattatgt attattattt ttcacattca tttttgcctg agacaggagg 300  
tggagggtgg taaattaaga aaccgggaa gctcagtgct tgagagaacc catagaagct 360  
acagtctagc ccatttggct tcttactttg ttagattaga taatcatacc tgctgctcca 420  
ggcgtgacta gccagtgagg agtcaggaag gaaattattt ccctctgtt ataccggtt 480  
acaattgccg actgtcgcca agggctttca gttttaatat ttcctctttg gtcctcagaa 540  
gtatcaggta ttagtctctg ccggaagcaa agcattggc acttccgtca gaggtgaatg 600  
tcttgctgt ctataattcc tcagtcaggt gcttctggg catgtgtgag catttgctca 660  
gctagctttt attgcttgta tgttatttgc ttcaaaaatt acaaggaggat ttgtcgggtc 720  
tgagcagtga cctatccagt cccctgaaac tctatggtt ttcgtgtaac ccagggatgt 780  
ctttagaggag gtatgtttgc tgtccacgaa agtaaaaagt agtgatatct cttctctct 840  
tttcttct tctcctaatt tccacattct cctatttctt ggcttctggc acagtggaga 900  
taccgtact ctacattagg catggcctta ggggatccga attctcaggt cttcctcaat 960  
gagttgctgt gtggtagaca gcatctgaag ttgaaatga tagagagacc ttgtagatt 1020  
gtggccaaat atttacacct ggttcataga gtatgtgtt gctgccctga tctcagtggt 1080  
ggtctgggtg ttagtgaaac tcatgatct taggaaacta tgtgaattag gcttagtccc 1140  
tgaccctgag aagcttatag ttagggaaaa agacaaacat ataaaggaga aatacacatt 1200  
agaaacatat tctttttttt ttttgagatg gagtctcatt ccgttgccag gccagagtgc 1260  
gggtgtgcga tcttggtca ctgcaacctc cgctccagg attcaagaga ttctcttgcc 1320  
tcagctgccc gagtagctgg gactacaggt gcgtgccgcc acgccagct aatttttgta 1380  
tttttagtag agacggggtt tcaccacatt ggccagaatg gtcttgatct cctgacctca 1440  
tgatccatcc accttggtccc tccaaagtgc tgggattaca agaaacatat tatttatggt 1500  
acacatttat taatcaccag atatgtttca ggccttacgc tgagtgttg ggaaattgag 1560  
ataaattata gtctcagatc tcatggggcg tggatgaaga gttgggagaa agaaaaaaat 1620  
aggccaggcg tagtggtta tacctgtaat ccagcactt tgggaggctg aggcaggcag 1680  
atcacctgag gtcgggagtt caagaccaga ctgacaaaaa tggagaagcc tcatctctgc 1740  
tagaaatata aaattagccg ggcagtcctc tagtcccagc tactcgggag gctgaggcag 1800  
gagaattgct tgaaccagg aggcggaggt tgcggtgagc cgagatcgca ccattgcact 1860  
ccagcctggg caacaacagc aaaactctgt ctcaaaaa 1898

<210> 133

<211> 1798

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22595

<400> 133

aagtacaaat ccatagggca catgagaact acaatgtcta tctacagtaa atacagtttg 60  
atgaataaaa tgaaaggcaa ttgacctaa gtgaaaaaa aaaacaaaaa acaatcaaag 120  
catgggtact atgtgtcatc tgtaagagca ttgggttaag aataacaaac aaaccagtat 180  
tatcgtttta atagccgaaa ttggcaaaat ttccagtttt tctttcataa gaatgttctt 240

tgcaagaaaa aattttcata tagtgagagc aaaaatggca accatttgca agtaaatgtc 300  
 ccatgaaatt aagtagcaga tatcaagctc atgaccttca gatagttacc cctaactcaa 360  
 tcaattacat agcaagtgcg gataattttc atagctccct attaaaatta tatttcaatg 420  
 cccttacaaa ttgtgactgt ttttaataaa agttgaccaa ctaaaatttt gtatatgaca 480  
 tatgataaat tccccctcaa gtcaccttac atttacttaa ttttattagg cagtgtctgt 540  
 ctaccaccca ataatacttg aggattctcc ctccatttgc acagacatca tagctgggaa 600  
 acagggattc acaagaccca ggctgttccc tacatatgtt tcctcctccg acatcagttc 660  
 atcagtcaat caagccatgt gagagtggag gcctgttatt ccctattati ctggggcact 720  
 ctactccaag taggaaaagg ccaggagggt ctgttaaagg atgcactcag agcccgggct 780  
 ccctaacgta tgagagtgtt aaccagcagg tgtagacttt tcaggagtga agaattgaggc 840  
 aggcattcca aacctggacc ttcattccct tttgtttcat ctcaagacaa ttctgaggga 900  
 ctgttttggg gcgtgtcttg aaggtgaacg ttgaagaaga gtgtgggctt tgatgtgact 960  
 cagttgagat ctttcatggg gaggcaggaa ttcaatgccg agaattctggg ctggtgtctt 1020  
 tgaggtcagt aggttgcgtc tttgtatcca agtccattgt tactagggtg gaggtgggag 1080  
 attctaaatg gcttccagac catctctctg attctctttg ggagatgggg tctgaaagac 1140  
 aatgtcagta gttttgggaa attctagaaa gtgtgcttgg aaacgtggga agagctcttg 1200  
 cctagtgcct aaacgctcca ttgacagctc tagccaagta gatacttggg aggtatagag 1260  
 ccgggtttgc atttatatca gcaaaccta tgtcagaatt gaagaagtag tcaggaaaaa 1320  
 gtgtcttggg cgcaggccgg ggaacatctt aaaagcaaac ttctagcctg ctgactcttg 1380  
 gcaatgagtg ttggatcctg gctaaattgc cttgaatgca gcatgaggcc aatctatgaa 1440  
 tccaacttct catggagaaa tgtaaatatt ttttcagttt gaatcaatca gggtgaaact 1500  
 accatgctat tggtttgctt actttttatt atttcatata aaatctaaga caaaatacat 1560  
 taaatgctta ttgacatatg tattttattt tcaccgggct gataatatct gcctgatttt 1620  
 aaactttctt ccattgtgta ggtttcaact tattctattg taagatactg ttaaatactaa 1680  
 tagaggcatt gtcaatttta tgtataattt tattttattt catatatttc ctattggctt 1740  
 tttacattta aattatggag cacttcatca tataaaaagc ttcaattata tttaaaaa 1798

<210> 134

<211> 1528

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22676

<400> 134

ctatgtatgt gaggccatgt atgagtgtac caccatcatat ctatgagtgt gtgagtatct 60  
 gtgagtcctt gtgtctgtgt ttgtgagcgt gtgtttatga gaggctaggt atgtgagggt 120  
 ggggtgtccg gtgcatgtgc ataagtgtca gaggctctct gtgtgtttgt gtgtgtgtgt 180  
 gtgtgtgccc gtgtgtgcac gtggggtggg atacacacag ggctccaggg ctggcatcag 240  
 gggcgaggcc agtgggtttt ggtggttggg gtcagtggag tcaggaacag gacagagtcc 300  
 cagagataac aggaatatga agaattgctg caatcgaacg tgcaaagctc tctcaacttt 360  
 tctgtgaca aaccgcaaac tgccgcgtc caccctcact cgtccctctt ccttctgccc 420  
 acagtagaag ggtggggctg gcgtggctat cctggctgag cccacgccct cctgtgccc 480  
 agcaaccgcc ccgggtgtgg attccatcgc tcctgggct tccagtcctt cccaccagcc 540

cctgccccgc tgtgcagaat atgctcggac ctctagggc cacataaaac caccacctca 600  
gccagaccag ttcctgggtca tcctggcctt agggctgggc actgggtcag cttctgagca 660  
ggcaggagct ctgctcatgt ggacctgaca cacattgcat gagcagacgg gagaaaaaga 720  
agccagttcc tgggagggag tgcactggcg aaggagtgtg tggcgtgggc agagagcaga 780  
ggtcaggggc ctccctgaga agggcagtgc gactggcatc tgaggggtga ggagaaaggc 840  
ctggccagag tcccagcttt atgaccattg cagggcagct tctgggctgt gcagctcaca 900  
cacaccttcc cctccttccc ctcttcccc tcctctctgc cctggggcca gcctccctcc 960  
tccactcccc tgaaatggct cccagccata attagcacag gacagaaaca gcaaatgctg 1020  
gtcgtgtgtg taggctcacg cctgtaatcc cagcactttg gaaggccgag gccggtggat 1080  
cacttgaagt caggagtctg agaccagcct ggccaacatg gtgaaatccc atcccactaa 1140  
aaatacaaaa attagtgtga tgtggtgtg cgcacctgta atcccagctg cttgggaggc 1200  
tgaggcagga gaatcgcttg aaccgagag gtggaggttg cagttagctg agatcatgcc 1260  
actgactcc agcctgggtg acagagcgag actctatctc aaaaaaaaaa aaagtcctta 1320  
gaacaacaa ggcctttcta agagtgtgcc ctaagcaagg ctgtgtgctg aatgctttga 1380  
atcatctcat ttgatataaa caccctgcta ggcacgatgg ctcatgccta taatcccaca 1440  
ctttgggagg ccaaggtggg aggacctcct gagaccggga gtttagacc agcctgggca 1500  
acataggaag gtaccatttc taaaaaa 1528

<210> 135

<211> 1132

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22909

<400> 135

gttgcttata ggttttcaga gtaaaagcag ttatgatctg atttcaaaaa taattgttgt 60  
aggaataatg acctatctaa acttttattt aaatttctgt ttaaacttct atttaaat 120  
gtgataagtt cctcatctga aatgagctgt cttgtgtgt tttgttctct ttttattaac 180  
tatgctcaga ctttaaagta tatacaaatc acctgaagat ctttttaaaa tctagaatct 240  
gattcagtaa ttttgggtg gggcctgaga tttttcattt ttgcaagct cctaggtgat 300  
gctaaatgct gttgtttcat ggaccatatt ttgagtacaa aggatctaaa ggaagatatt 360  
ttatatgtct ctaatgtaac atttttaaac ataaacaact ttagattctg tgaaccttaa 420  
agtgatccgc ctcaatctaa gagaataaca attttgggag acacttataa aaataatgtg 480  
atgttagctt aaacattaca cggacattac aaccttaca cttaggtgag agaggctttg 540  
gttatgctga gttgcctatg tgctagtgat aacactaccc ctttcttcta agtaaaatat 600  
ctcaggatac aagtgaataa taatagtact gttatcgagt tctcttttgt ggtcaccatg 660  
atgtgtgttg aggagcagag tgaacaaagg caacctgatc cctgtctctg tagagcttag 720  
tcittattca ctgccagtat tttatttttg ctcatagct aattgagaca cattgatacc 780  
tgatgattgg gaggaactgt tctaattgca tttgtaaaag gagaattcaa attggaagta 840  
ccagctaggc acggtggctc acacatataa ttccagcact ttgagaggct gaggtaggag 900  
gatcacactt gagcccagga gtttagacc agcctgggaa acttagggaa acccgatctc 960  
tattaaaaat ttaaaaatta gccacgcttg gtggcaggca catatagtcc caggtaactt 1020  
gagagattga ggtgggatga tcacttgagt ctgggaagtc aagactgcag tgagccatga 1080

tcattgggact acactgttagc ctgggtgaca cagcaagact ctgtctcaaa aa

1132

&lt;210&gt; 136

&lt;211&gt; 2160

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla24435

&lt;400&gt; 136

aggagaaact gttttgtac actgtacatc cttagtattt ttacacgtat atgataggga 60  
tgaacatgat tttccttcgt acagacagct taaataaagc actatgtcaa tctgctactt 120  
ctctgtttat tgtgtttgga tgtggttcta taatcccccc aaattaaatc ttccttaatg 180  
aaaacatgat ttttaatagc cccagctggt attaacctac cttgtataaa atgtgacagg 240  
aaaatataga aataattcct tgtagctcac acacacacac ataggggacg atttttactt 300  
cagtgaatg gcagtagcgc ggttgtgaaa actttgatga acggctgctt ctgaggggaa 360  
acgctgacct ctcagcactg gatttaggat ggatgtactg tgaagccagg gatgaaggag 420  
gtctcagacc ctggggacat tcagaccgca atcatctata caacacacgg tttggacca 480  
gaatctgaag gaatgtagct tttcattaac gtcttctga taatgtactg ctctgcata 540  
ttcctttctt agagtgtatt tctaacaaca tgtcatggca aattaacaaa cttagacgtg 600  
ggtgatgtag atgggtagga tggctggact gcagctgac ttcacgttga atcattctgg 660  
atggggcctt tttctgattt tacctcataa agctactatt gtagaaactt ggctttgctc 720  
ctgtgacgaa gccagacaga ggaatggctt ttgggaccag agtgagtcaa gcatgtatgt 780  
gtatgtcaca cgcccaaatt tgagggcatt ctcacatgtg ctcttctctc aaaaccactg 840  
gggttgacag atccaggagg ctaaaaaaaaa gtgacctcta taattcttta aagggtctat 900  
ttttagaata ttgtataatt tattcacagt atatctaaaa cagaattaag gacaattaa 960  
atatcttatg tgacagcctt tatgtctagc acatttgatg aaataaaaaa cttctgaatc 1020  
tgaatagaag ttctactgtt tcaggcttga accttttaca tgctcaagag attcaaatgg 1080  
tctctgtgtg tagatcatgc caccgcctcc aaagccta atccacatcact tctgagaggc 1140  
aaggctgagc atatggtgac atcagctctg tgttgagatg gtgatgagga tgatggctcg 1200  
ctggccaggc agggcagccg aaggtcaggg acctgtccta actaactgca gccttgcctt 1260  
tagtgtttgt cattctcaga tacaacacgg tatgtccagt gtccgttttt attacttta 1320  
agcatttgag ggcttaattg tgtatagtag aaatactatt ttagacaaat aattatctgt 1380  
gtacagatat ttgatatact ctaagtaaat tttctaattt cactaagtac gtttttaggc 1440  
tcctctcaaa tactgcgtat tgaagaaaaa aatctgacac caccgagcca aagatgctt 1500  
tttgtctgtt ttcgttgttt aacagaatgg aaagagtaat gcatagtgtc tcttggtgtc 1560  
tcttgattga ttgattgtgc acaagtagg acgataaata aataaaatgg agtctgatgg 1620  
gacattgatt aaaggatgaag gatgattgat atatagatca tgaagaaaaa aatgaatggc 1680  
aggaaaaaaa gtttggctct taatatactt tggcctagtt aaaatatgtg ctttttgggt 1740  
gtgttttgtt catcactaca agataaaaag gaaacattac aactcaagtc tttaaaaagt 1800  
tcatttatgt aaaaatcatat gtataaccta gcatacgaat gagcagattt aaacacataa 1860  
cttcaagcca tttctgaaaa catacaccag gagctctgct cagctagagt cagactccag 1920  
ctccagcccg actgcgtgcg gggacagcgc ccgcttgat gaggaccagc cccactgcag 1980  
gctgaggcgg tgtcaccctg ggaaggctgt ggtgcgttgt ggcatattaa gtctaaacca 2040

gatgaatgta aatatctctt tgtaaatcat ttatttcact ctgttccatc caggtcagca 2100  
atcagattgt ggcatgctgg gtaactggaa aaaataataa aaagtaagtt tcaataaaaa 2160

<210> 137

<211> 1766

<212> DNA

<213> Homo sapiens

<220>

<223> nbla20146

<400> 137

aaaaaagaaa acagccagtc tgaagtatcc attactcaag tccaaggtg acctctctct 60  
cctcagattt cttcttggc cctgtgccct gcactttctt cactgtgttc aagtgtcata 120  
gctatcaggc cactatcatg gatatcatgt atccttcctg gtgtcacac acctgtcacc 180  
ttgtaaaaca cggacattag tgtgaacaca ggacagcttc gctctttctc ttctgcctt 240  
tcctctatca gagaagtga tccattaagt aattatgttt ggtctattgt aattacagat 300  
gggaccactc aggggcaaag gtctgactct tcctggtagg tgtaacagat agttcacctg 360  
tgaacgaaca tcagcttaca gatgatgagg acttaaggtt gcaagaatga agatttcaga 420  
ctccaagatc cttattctt tgggccttga gcaggttagt agtcccctgg tgagaagaga 480  
acattttgtt tgtggggcta atggggccag aggagggtta gactctgctg tctaagctga 540  
agcctcttcc tcgcagcgag ggtcttccca ggaacattga tgctgcctca gacatcctct 600  
tttctccaga gtagggaaga ctcccactga tctgagaatg agcccagagg ctgtgtgggg 660  
gactgtttta ctctgatact acctggatat ctacttccct ttaccctgtt tctgcttaac 720  
agaactgcc aagccagaag tacctttgca ctccctggtt tcagtggaca gaggaagctt 780  
tagatagaga ctttagacc tgccctgcag agtcaagact tgaggccatt gaagctgcag 840  
gaagccctgc ccagggatgg tcctgccatg aggaggctgc aacctataa gagggctcaa 900  
gattgtgaat tctgtcctg ccatgaggag ctcaagaagg caggaagcca gcaatagggg 960  
agagaatctg tgtgcttatg gacagtcctt acctaaagct gtttctgaat gttgcaccct 1020  
ttgagaaatt tcttctcaga accataaatt gaaacaaatg aggactgac ttgtatacaa 1080  
agtgccaaact caagagggaa gttggagtat gtctgttgca gagaaccaat atagcagtgc 1140  
ccaggggtag agaccatgtg ttccatactc ggatatttgg gtctttttga gagagctggg 1200  
gaaagtagca gcaactagat taagactggg aggtatttga ccaaactaaa ggccttttct 1260  
ccttactgca tctgacgtgt gtcttcttga gacaagatag caccatgaa ttacatcatg 1320  
aggtatgtgt gaattcagtt tacatgtaag acctgagagt tcgaagaggg cacattccca 1380  
aagacattcc cagtcatgaa atgtagaaga ctggaaaatt aagacattat gtaaaggtag 1440  
atatggcttt tagagttaca ttatgcttgg catgaataag gtgccaggaa aacagtttaa 1500  
aattatacat cagcatacag actgctgtta gaaggtatgg gatcatatta agataatctg 1560  
tcagctacta ctaggcattt attgttaatt gattacaga aagtcattca agactgagtt 1620  
tatagaaagc atattgcac tatctctgtg tagaacattt gattcacatt gtgaagaatg 1680  
cagtttaaaa tatactgaat gcaatctaga tgtattgtac acgaaaggtg aaaaataaca 1740  
ggtgctcttt actgtttaga taaaaa 1766

<210> 138

&lt;211&gt; 2470

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla20170

&lt;400&gt; 138

agcttttaggc acgttttagt gatgtgtagg actttgacct atatttggtg tggcttctat 60  
cctatgaaaa gggaattgag tgttttgact cgctgttcc cacctgttg gcctgtctgt 120  
aggtatacct tctaaaatca actgacatct ccattttgct acagagtagc aaaaatcaac 180  
aatttttaag cataactaag gtgtgcattt gatctgaatc ttcttgatgc tatcatgttt 240  
cagctgtgaa tatagcctgt cagatgccta gaacaatcag ttgaactggt atgagtggct 300  
gcattagggc ttacaaatc gttaggactg aattttggtg ggtttagaga gtgcattttt 360  
atagctgagt tgaatgtgat gatttcaacta caggcttttg gcaaaggagg ggagctgcag 420  
tgagttagctc ataagattca tttataaat agaaacataa ggattttgta taaggcctca 480  
cctgtttata atctacctaa gattcttttt gggaattaaa gttagaatta taaatggctg 540  
gttgggtaaa atgtaatact atgggctttc tttagatttt tcagagtatg tgggtaacat 600  
tttggtttat attcttcccta aagacagatt gttaggtaat gtgtaaaatc taatttgacc 660  
ttatgttctc acaattaaag gtttatattc tagataacag gtagctgata gtcctgggt 720  
tctcagctgg tgtaattaac ataattatga aagccccaac ttttctttt ttttaagttct 780  
tagaggtaga acacagaaca atgagccaaa aacctgtta tttataagat ttgaaaaac 840  
aaaggataaa agtttagtca tgttgagtag ctcaatagta ttttgttta aagaatgtt 900  
aaattgtgta taggaacagt taaacctga tgccctttta gttttttatt tggagtaata 960  
ctcttagtaa ctggtctatt ataatggaa tgagaaaaag tgtaggctgc tgtgtttgca 1020  
tacctgaggg gtctgtctatt taggcacata tgtttctatt gaaaacttct atctccagaa 1080  
ttacctaaaa ctgatggga atagtgaagt cactcactgc tttattgcag ttactttagc 1140  
ttcgtgtttc actgttcggg aagtgtctaa aacatggaat tacagcaaag tgtctgact 1200  
tttcaaagac ctaagggaaa agatggactg atgaaggtag gtggggtttg ttcathtagt 1260  
ttgcaacaat atagaatagt actgagaacg taattgtctc tggttatata gtgatggctc 1320  
ggaaggtagt gtgcctgtga gaatttgga acataagttt ttttgatcaa gttactgtgc 1380  
cggttaagtg actaaatcta tagtcttatg ctttttcttt ttgtagtctg gtagcathtt 1440  
attaaaaact tcaacctttt aagatttctg caacttagca gatgtgtctt aagatcttga 1500  
aaagcacaag gtttcttaag cagcacatgc cactaactgg tgagttagtc tttgtcactt 1560  
cattgagtga attgaatctc tggttgggct tgtaggctt acttggaat taaatttccg 1620  
ttcagacgtt gaaagtgaga gtttgcaagt ttttcagtgg gttaatctga tgtgaaattt 1680  
cttagaactc attttggaat ggattttcac atctgcacta attcttaaat ttttagcac 1740  
tacagggaag atctgttctt tgaaacaggt gtatgagaat ggctcaagt ggaacatacc 1800  
acaaggcatg tattaccgta aactaatttt caaattaccc ttttttctt tctatgttcc 1860  
cggtagctgt ggatcgactc attggtgatt gtatcgacga acgttgacta cggaaccttc 1920  
taaaatattt acttaacaca catggacatc aactacttat aatgaactgt taattactgt 1980  
tccaatagcg tactgagcgc tttgggcagg gaggtgcggg gcctgtgggt ggacagggtc 2040  
ctagaggaat ggggcctgga actccagcag gatatgtag agggagagaa gtagtgaag 2100  
gcccacaaca aaaacccgga ttttagatgt gatatttagg ctttcattcc agtttgttt 2160  
gtttttttgt ttagatacca atcttttaa ttcttgcat ttagtaagaa agctatctt 2220  
ttatggatgt tagcagtta ttgacctaat atttgtaaat ggtctgtttg ggcaggtaaa 2280



attatgtaat gcagtgttg gaacaggaga atttttttt cttttttatt tctttatatt 2340  
ttctttttta ctgtataatg tccctcaagt tatggcagtg taccttgtag cactgaattt 2400  
ccaaagtga ccaatttttt tttttttact gtgcttcaaa taaatagaaa aatagttata 2460  
atattaaaaa 2470

<210> 139

<211> 1992

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a20216

<400> 139

tagttataca aagtattttc ataataattag tctttcttta atctgtgtag aaatacaaaa 60  
ctgtgtgctt cagataagtc tcatttccaa ttgataaca ttatgtgtg tcctataatg 120  
tataattga gtatgtataa ggagaatcta tgcctaaca actttgtaga accctcttaa 180  
aataaaatgt aatttgaaat cctcagggtt tagcaattca gttacccaat ttttcttctc 240  
aaaatatgtt tggggctata gcgggtttcc taaatttcat tccatctctt ccattagccc 300  
agaagttata tttacaggt aggactgata ggcaagttct atgaaccttt ttggtgttt 360  
ctgctctttt ggcatgctg tttctatgac tcagtttata tttcttagca tggtttatcc 420  
aaaactaaat gtattaattc attagtagca accaattggg atttcagtct tagcttatcc 480  
atctctcttc tcttttttgg ttgcaatggc aagatttaca gcatttaaac tttcttgcta 540  
ctaaaccttc ctcacctac tcctcgcttc taaaatgatt cttttggcca atcactttgt 600  
tgtcagtata gttaccatca tagaaaataa ggatttgatt tcagaaagt tagaaatata 660  
aagctcggct tctaggtatg taaaatttga tgcttcagac catcagcaag atcaatgaat 720  
ttgatacatt gatcatctcc tctgcctggg agcttgggat atatttggtg tgtgctggat 780  
tggggagacc ttctaaacac atttctgtgt tcgtgtttt gaataacta tttacgttaa 840  
atattttaag cttctagtag tcaagggtt cggtagtgtt atacagactt gtttttaaat 900  
tttatttgca tataatgcaa aaaggaaatg aaagcatttg aacaatgtga acaattgcct 960  
ttactttttt ttctaaaaga aaataataac aatagtagac ttgttcagag agagcatccc 1020  
attcatctgc gctccagtct cctcatctga aaatgagggg gtaggagtag ataacctttg 1080  
aaaaatcttt gagatgaagt tcatcagagg catttgaaa gtcagtatca gttttctgtt 1140  
acaaagaaaa gccctgtccc acaaatttct gatttctcaa tggactgtga aaggtagag 1200  
taaatactgt tttcctgaat tcccaggggt ctagaacagc attaaacgaa atcttccagt 1260  
gtatctgggg cgacattgtt ttctcgctc tgaaggattt tttctaggt ggaatgtagt 1320  
aatctccagc tggatgatca ttgactaaat tgtaagccca ttcaaccag agagaaataa 1380  
gcctccagtg cttttggata tagtaattct acctgcatt gtgtgtgtgt gtgtgtttt 1440  
atatgtgcac tcatatttgt gtattcagag tgagtctaac taaaaatgaa acatctttca 1500  
tgacctaaa taacaccttt aggtcacgc aatctcagct gaggctaaag aatcacaaga 1560  
agcgagaata tgatgtgtt gccaaattaa agtagttgat catgactcaa ctagagaaag 1620  
ataggggaag ggtgtgtgag atgtggctgc aggcattggc aatgacatat tcttgaaagc 1680  
cttggaact actttaacaa agttgaggtt aggaaagtga aacgtcatta aagagctcat 1740  
caaacagag atatgattga tttgttttct tctaaatga cactgcttga agtatttaaa 1800  
attatctgga aagaggaag actgaaaaga aggagtcacg gtgagtaact gaggtacaag 1860

gtgatggcctt ccaaagttaa tgtcagtgtg gtaggcaagg aggggatgga gtagataaat 1920  
attaaagagc agaatgiatt ggtctggttg gttgaatatg tgtggtggtg gtggtagtag 1980  
gttgccaaa aa 1992

<210> 140

<211> 1603

<212> DNA

<213> Homo sapiens

<220>

<223> nbla20657

<400> 140

aagcattctc tctgtgcaga ttgctctgaa aagtcgattt ctgtaatat tgcgtgtttt 60  
cctctaatagc tggccttttt gcttcccaca gtgttttacg acgacgactt gactgatgct 120  
gtgttttaaaa cgctctcccg actcgccac agattgaaaa atgcctgcac agccatactg 180  
tcggtggaga agaggtgagc tttgcgccac gggaaccgtg ctgacgtccc gagtgtcagc 240  
ggaactctca cctcctaatt gtgtccttgt tagtgtcatt atgattgtta ctgagtcca 300  
cttattgagc acctactatg tgccaggctc gtgctcatcc tttgtgtacg ttactgcact 360  
gaatctgcat cctagccctg tgtgcaggcg ctgctgtccc acttgactga tgaagagagg 420  
aaggctggaa agcatcaggg gccttggcca gggcacggct agttagtgat agacaaggac 480  
ttgaatgcag actgtactgg aacctcaact cttggccagc acacactgtc gagagcttct 540  
cttctgaat gtctctctg tggtgccgtc tgtctcttca gctccccag gtctcttct 600  
cttctgaat cggacagctc ctacccaac agcctcacc agacatttc actagaatat 660  
cctgaaatgt taggttccat ttattgagtg ccacactgt gatagctaca cacattctcc 720  
tgtaatactt aacagtagtc cacagctttt ctgaagatcg tttggaatcc acagcaaaag 780  
ctgtaaaacg aaacagactt cttcaccag caattcagca tctggaaatt cacattcagg 840  
gttgtgtaca aagctgtatg tacttgcata tttattgcag tgttacttat accaataata 900  
ccgagggcctt gctttgaggc acacactgag caatagcaat gtacagacct catttggatc 960  
ctgatttcat aaactgtaa ggaaaaacat caggacagtt gggaaaagtt gaatactgaa 1020  
tatttgatgt taaagggtga ttgttaact ttagttgaag aggtctccat cttcttgaga 1080  
cacacactga ctttccaac ttcacagagg aaatgggttg gtgtctggca tttgctttt 1140  
aataactcag tgagggcagg gggccccggg aagagccaag gtggcagagt ggctggaagt 1200  
ggacagtggc tgaagctggt aatgggttca ttagacagtt ttgtttttt tgttttttg 1260  
aggcagagtc ttgccctgtc ggcccaggct ggagtgtgat ggtgcgatct cggctcagca 1320  
caagctccac ctcccgggtt cacaccattc tcctgtctca gcctccaag tagctgggat 1380  
tacaggcatg cgtcaccaca cctggctaatt tttgtatit ttagtagaaa cggggtttca 1440  
ccatgttgtc caggctggtc tcaaactcct gacctcaggt gatctgccct cctcggcctc 1500  
ccacagtact gagattacag gtgggagcca ccacgccag catagactgt tcttactcct 1560  
gttgcattgtc tggaattttt cttgataaaa aaatttgaa aaa 1603

<210> 141

<211> 2235

<212> DNA

<213> Homo sapiens

<220>

<223> nbla20688

<400> 141

```
aagtgggtgca catgtatttg ttaaataagg tcacccatgc tttgtcttta gattccccag 60
gcaggattct gtaccttttt aaaaaaatat atttaatttt atttacttat ttatttattt 120
atttatttac ttatttattt gacagagtct cgctttgcca cccagtctgg agtgcagcgg 180
tgcaatccca gctcactgca acctccgcct tctgggtcca agcagttctc ctgccttagc 240
ctcctgagtg gctgcgactg caggctcgtg ccaccgcgcc cagctaattt tgtaattttt 300
gtaggacagg gatttcccca tgttgcccag gacggctctc agctcctgag ctcagggtgac 360
ccgcctgcct cggcctccca aagttctggg attactggcc tgagccaccg tccctggcct 420
tcagtcaggg ttctgtctgt tgactctcca acctcgaaag cagcagcggg attgtttctg 480
agaaagttag ttgcatgac ttaggaaccg taacaagcct ctcttcataa ggataggaag 540
aagcccaagg gcattagtgg gaggcggata agggagccta acttcccagt ttggctatca 600

ttctttgcaa aatcacttct aatctccaaa gaggaggggg tttctcctct ttcaagttgc 660
ttagaagggc acccacagat ctgcttattt ctcacagcat ctctctgccc ttgcaatctt 720
tcctctccac ctcaccatcc acttttagtg caattagtga attcttttct gtttttcaca 780
caatcccttt ttgtcttatg ttgggagggt gctgaaatcc ctttagaaac aggtcactgt 840
tattctgaca ggtggccagc cttaaagcctg cttcatctc catcatttaa gtaaataaat 900
accgtgacct aggtcttaag tagggagaaa cggaagctgg gaggatttgg gatttgtcaa 960
ttgcagataa aacacttgct gtgtctcaga ataatgcccc attccccact ctcatccagc 1020
aaggatgtgc agctttggca gaatcaacat ccagatatta ttttgcttcc tagtctcttt 1080
tcatgtctta ttccacttt cctgaaagtt ttaagatgct ttctgtgtaa ttattaaaca 1140
aaagtgaatt aagatctact ttaaggatt tggccatgag gtgaggcatt tggaaacact 1200
gctaggtatg gggcaggaac aattgcttgt ggggaagggt ccaggatggg atggtcctaa 1260
tgtgtggttt cacggaaggc cccaggacca cttctggatg tcaggttctt agcacaaaaac 1320
atttttggtt ttgtttgctt ctgtgtttgt ttgtttgttt tattttgttt tctcctatct 1380
tgcatccaat agcaggatgt gtcggccttc tagcatggct cttccagaag tttagagcta 1440
cttttccctc ctttttctaa gtgtccctc taccttctc ctcttacttt gcttttccat 1500
gggagagaaa aacactgatt cagaaaactc cctaagaagc tccaatcttc cctggtgccc 1560
cagtaaagtc agcctctgga gatcaggaga ggttcagaga ggatcagtgg tatcaccatg 1620
gtcacagagc aattcaaaga taatgcccc ctttggcatt tggacattcc attttgagca 1680
tgaactgatt tttagccttg acattcagaa ataatcaaag atggagagat cagttttggc 1740
ctgacatagt gtgattttgt agcacaggac cagctgcca tctgtgaaga gaaaacaaga 1800
ttatttgaaa gaaacctcag aatctgaggt ttcccatgaa tgttcccatg aggattcatt 1860
ttccttttct tcaaccgtc cacctgcaac aattccaata ggcttccaat tctccttct 1920
acaagagaga tgggtgctca gtttctacct tttctacctc agaactgat ggctgtttgt 1980
catgcgtttt gacatacatg tgtatgtcag gtctggaagc tgttgggtgt tggtaagagc 2040
cccaacttt ggaatcagac atgctgggta gccttggatg tgctcttta tttctctcag 2100
cctcagattc cacacttgta gaaaaggaat cattcccac tcacagtgga tttgtcagaa 2160
ttgatacatt aatatcgaca ggaccctggg tggaggattt ttattctgtc aattgtaatt 2220
tcctaaagag aaaaaa 2235
```

<210> 142  
 <211> 1952  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <223> nbla20755

<400> 142

```

tttgaaaccc agtgaactgc aggagtatgg ctttggaatac tcttggaatc taatttgctt 60
tgtaaaatag ggaatatttc atttgtgtct tcaggcaaga ggtaaatagt tgatttcttg 120
tgatctttgt cagttctgag ctgttgagta gtttagaaat gaagcttaaa ctagacctga 180
tagcctacta cagtgttaaa atacatatga aaagtcaagc atagagtcta atgaatattc 240
ctgcctctta caaaggtaga aatgatactg cctatggtat tttttttgt ttgagtgcaa 300
atccaattca tgaatttgtg cattttagtt gaccagtgtt taatatttag gaatagttag 360
tacctaattc atgatgacct ctgttcttag catattgaag gccagctatc attaaagcag 420
tgcttttcac agaattggtt tgctgacctc ctaaatagaa gtgtggatgg cagaagcatc 480
aaagaggatg atcacaagtg gggaaggcag aaattttaaa agaactgact gaagtaactc 540
ctctactaat gtgacacat ctctatcccc cacaaacct tggaataact agttttggga 600
gaagagagga gtatggtgac tagaaagtag ctataacctg ttgatcatg tatactttat 660
aaggcagtga gtcagaagat atgtttaaga aatggaaggt tgttgagta gctctgatga 720
cagatgctta tcataaggca aacttaatat atgttccaca gtgttcagaa taccacttgg 780
tcggtggact tttaaatgtg tgcatactta atttttaata aaccgtagac atggtatatt 840
taaacatact gtttcattta agactaactt ttaagaaatt tgctatcacg tggttcacat 900
atgatgtaca agtgtatagt tgcatgagat aaagctggaa gatgacatga aaaatttaat 960
tgtggtagtc tcagagtaag agtaattggg gagctttaaa ttttaatttt gtctgtgttt 1020
tcagatttaa gtattaatgt aattgcacaa attacaaatg tttaaaaagt gaagtgaatt 1080
tatacaatct agaagtgtt tgtttcttcc tggaatgagc aaaataaaat tagctatcgc 1140
ctgcagcatt gggaatctaa gtgttgacat ctaagggtgag tgatataaca atgctgggag 1200
cagggtgaaa tggtagataa accaaaatgc taacattttt cttgaaagt acttgagttt 1260
catgatagtt ccagaagagg ataacaaatt cccatttcat aacaagtaaa ttaaaatatt 1320
tccttatgaa ctgcaactt agtgggtgca gttacatact aatctcttcc ctgctttcat 1380
ttcctgtag aataccagag taaaagtgtt ctgattctag tcaactttga aaagcaaaga 1440
gttgtaggtt acagctgaat tttgaggctt tacagtaaga gaaacagagt gactctgaca 1500
aattttaagc tcatatattt tccttttaga aatgtaggaa ctctgcacaa ataatttaga 1560
aacaattac caatttcaat acaaaaaatt ttgcaggata gtggaatttg taagcttgc 1620
ataccttgat tttttgaatt caccttttcc caaaagaaag caactgttg ccaggcacag 1680
tggctcatgc ctgtaatcct aacacttttg gaggtgaggt tgggcggatc atgaggtcag 1740
gagatcgaga ccaacctggc caacatggtg aaaccccgtc tctactaaaa atacaaaaat 1800
tagctgggac tgggtgcaca tgctgtaat tccagctact tgggaggctg aggcagaaga 1860
atcgcttgaa ccaggagatc ggaggttgca gtgagccgag atcatgctgc tgtactccag 1920
cctagcgaca gagcgagact cgtctcaaa aa 1952

```

<210> 143

&lt;211&gt; 1605

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla21013

&lt;400&gt; 143

```
aaatccagta ctcggttaca ccagaagact ctgatctttg cccccgaaaa ctgtcctact 60
ttatccttat acctgaaatc actgcatacc tgaaatcact gcagccctac tgttttacct 120
ataccattaa tttaaaaagg catctatttc tttatagaaa gaaacattca cagtgaggtc 180
ttagtttggtg aacctcaaaa tccagataat aatccacttt agttattact ttgtaattgc 240
ttctcagtca ttggctgata atgcaatggg gtgataaatt tgacttatct ccacatacaa 300
aagtcgatca gaagggatag ttctcttcct tttttcccc tcctactggc tcttactgtt 360
ttctaattct cagtgtaaat ggaatgaaca catctatagt taaggtaaatt gccaccaatc 420
agaagattga gtgatttact gcttgtaaag caactgtctt tgaatcttat gaaatagggtg 480
gtgttgctac cacagaagcc aaaaaggctt taaaattgga aatagatgtc tttattgtac 540
ttcagccaac agcaagccag gggaagggaac atacataaat atgacagggtc atatatgaaa 600
tttggtcttc ctctatcaa agtagcctag gagcttgagg gaagcctaatt taactaaaac 660
aggaaaaaag catactcatc tgatgtaaaa actcatcagc tgtaaattac caacattaaa 720
ccagaagtca ttaccagtta aaatgtgtgg ttttcattct attcttaaat aggagagggtg 780
gacagtagtg taagtaacat tgctttaaag acataaagct tgtcctggta aacatgggtc 840
aaatgagaaa tgccctccatc ttttcaggta gaaccagatt tcaggcatag ctgagctaca 900
tctgtatttg aaatacaata aaaatatttc ttatgtctct gtattctctt ttaaaaagaa 960
ctgctgactg gtcctgtct cttcagtaac actgattttt ttttaaagaa gtgatattgt 1020
ggactctgtt gtagaagaat gagcactagt attcagcaac aagtgcattt tctccatgtt 1080
atgttgagct ctgttgaggc ctatggtagg tatttgatgt gaaaaccttg ctgtgggaat 1140
ttttattctt tccttttccc cccacgccag ttcgttttgg taagtctttt atttgaacac 1200
aagacgcatg cttttttaaa cctctagttt ttgaagtaac tgtagaagag aatctttaaa 1260
aaaaaatgga gggcagaatg cttgttagca atctgaaaaa caaagctgaa caagctgctt 1320
aaagtttctg attaagaagt ttaaaaagaa aaattaattg ctactgcttt ccaggtaatt 1380
gtattattag tttctgtata aaagaaacat tattgctgtt gtataaataa aattttcctg 1440
tggtacaatt aagtattgat ttttcagaaa ctgtccctat aaatcttttc acatatttcc 1500
atgtgctgtc caaaacaaaa attattgaaa tgtctaattc gtgagattat atactcctgg 1560
taaaatattt ttgtatatat aaagaaatat ttactattgg aaaaaa 1605
```

&lt;210&gt; 144

&lt;211&gt; 1534

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla21172

&lt;400&gt; 144

ctataaatat ttcaatcctt accttcaaat gtatatatt gtgcacttca cggagttaga 60  
 gtgagaatgc tatgttcagc aggtgtctt aagttaaaca ttcagactta gaaaaccgtt 120  
 agtccacatt tggcatattc acttagaaaa atacaggata ggatgcagca agtagggcag 180  
 tgccaggcat tccacaggga tccttgtagc agttcacgca gcaatacaac ttaggtctga 240  
 gatgtgagat ccacatcacg caagtgcaca agacacctgg ttttaaaagt tttatgacct 300  
 gttaccaca ggcatagctt ctaagcttcc tgagacatat gcctcttatg tcattgcact 360  
 taagatgtag ggtctccatt ggatacttta gtttctccca gtgaagacgc aatttaccag 420  
 tcaaatcatt tttaccacaa gcaatgttgt aacacagttg acatactagc cttatcaggg 480  
 tgccagagaa acaactagaa atttaatgaa aggccaaatt cccacacaga aggggaaagt 540  
 tcttattaaa cagtttatag tagtcctac aagatttggg gctgggggcg gggagttcaa 600  
 tgaatagta ccaaagggtca catggaagaa tgtacttaga aatgaataaa caatcaggaa 660  
 tagagtccag actagatcca agtacctatg aaaacttaca tgggctgggc gtgttggtc 720  
 atgcctgtaa tcccagcact ttgggaggct aacgcaagag gatcacgtga gcccaggagt 780  
 tcaagactag cctggacaac atactgagat cccatctct aaaaaaata aaaaattacc 840  
 tgggtttggt ggtgcatacc tgtagtctta gctacttagg aggatgaggt gtaagttgag 900  
 cctgggagat ccaggctgca gtgagccatg gttgtgccac tgtactccag cctagctgac 960  
 agaatgagac cttgtctcaa aaaaggaaag aaaacataca tacttaaatg ataaaggtag 1020  
 cattttatit ttatgggaaa atgacagatc agtaaagaat ggtatatggc tatttggaag 1080  
 aaaatagatt tagactcttg ctccatacaa tattacaaca atacaaatta taggtgggtt 1140  
 aatatataaa tgtaaaaaaa ctatatgtta tttggcaacc atgataataa tagttgataa 1200  
 ggcaagactc tgattggtac taaaactagt acataaaaat ttcaggaata ggccaggcgt 1260  
 ggtggctcac acctgtaac ccagcacttt gggaggccga ggccagtga tcacctgagg 1320  
 tgaggagtgc aagaccagcc tagccaacat ggtgaaaccc cgtctctact aaaaataaaa 1380  
 aattagccgg gtgtgggtggc acacacctat agtccagct acttgggagg ctgaggcagg 1440  
 agaatcgctt gaacctggga ggcgagggtt gcagtgagcc aagatcgtgc cactgcacta 1500  
 caacctgggc aagagtgaga ctccgtctca aaaa 1534

&lt;210&gt; 145

&lt;211&gt; 3171

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla21200

&lt;400&gt; 145

gacagagtgc aaacaactaa agtataccac gggagaaggg gaaggaagtg ctgcattaga 60  
 agtgcaagca aactgcaatg gaagcaaaga agtgatgaaa ttctaaagag aacagtcagg 120  
 actgcaaat cacattgtta caccatgagg aaaacaactg gagcaagaaa catcccagag 180  
 aagtaactag ggtagataa aggataatgc catgggctac caagaagcaa caagacgggg 240  
 atatttttct tcaagcacgc catgtgagtc acagataata gagtcgggac attgggctca 300  
 gccagtgaac actcactgct caacagaacc tgtctttttt tttttcctt tttctactat 360  
 ttttcttct tgtgttaagg taaactacta ggtactgttt ttaatttagt ttttaattat 420  
 gatctaagga tcagtactat ggaaacacac ataattatat aagaaagtat tgcacatata 480

aagcattatt tattttataa tattaataa atggcaacaa tctaattgtc aatagtaggg 540  
gaaaatttac aaaactttac tgtctgtact taacaggata ttctccagct actaatgggt 600  
gtttatgctg aattagaaca ggaaaaaatg cccatatttt aatgttaggt gagaaaactg 660  
ggatgcaaaa ttaccatag agtgtgatca aaagcaaaaa gctagtgcac tttttagcaa 720  
caaaatgtat cagtggctgt ctttgtgtag ggggaaagag gaggctagaa aatagtattt 780  
gttgagtcca accaactaat ttgttcaatg ttctttctg tcgtaaaggt tttatttgc 840  
attttaatat atgttttgac cagatgtggt ggctcagggc tgtaatccca gcactttggg 900  
aggctgaggc aggtggagta cttgaggta ggagttigaa accagcctgg ccaacgtggt 960  
gaaaccccgct ctgtactaaa atacaaaaat tagctaggtg tagtggcgca tgcctgtaat 1020  
cccagctact tgggaggctg aagcatgaga atcgcttgaa cctgggaggt ggaggttgca 1080  
gtgagccaag atcacgccac tgcactccag cctgggccac agagtgcagat tccgtctcaa 1140  
aaatatatat aagtaagtaa aataaaaatt taaagatgta tatatgtgta tatgcacaca 1200  
gacacacaca cacacatata tatgttttga tgagcctcta ataaggcact taagggaagt 1260  
ttaatgattt agttatatgg ttattttctt ggaaaaaaa atcgaggttc ctaatcatta 1320  
agggatatta gttgtcttga agattgacat atgttaagca cacctggaat aacaacaaa 1380  
tttggctggt aggtataacc caatgagtaa aagacaagga tgtgcattat gacatagcca 1440  
cagtgcagcag ggaggagctg cccatgcaca caaactcaca cattcctgca cacaggcata 1500  
cctcagtaat gaaaccacgt acccctaagg actgagagcc aatccatggg agagggtttt 1560  
aaacgcaaaa acacataagg tgggcagaga tccgagactc attttatgta gtatttttca 1620  
atcgcggttg agagcattgg gtagaaggac acttctagat gaagtcgaaa gtggcaacag 1680  
tatatctaga gctgacagct ggtgttgtaa aatcttctg aaacaatgtt ggcaccgtgg 1740  
ctgtgtttct cttgtcttcc tgtctgtctc tggccaggt tgcctatgc tcttccctt 1800  
atttcttatt ctttttctg gcctcagtc taggggaagt gaactgtgta cccagggtgtg 1860  
tatctggcat ttctctagca ggttttttaa taattttatc tatcataatt atttcatca 1920  
ggacagaaat ctttccatat tctttatcaa gatactctat catgaaaatt gtcaaatata 1980  
tgcaaaaaca aagagaatga ccttccatat accattactc agatacactg agtaccaga 2040  
ttttgcata ctgagttcat ctgtcgtctc cctcttttt gtcaaagtaa aaatctcaga 2100  
tgtgtcattt cacccttatt tacttttaggt tatttctcag aaaaatggag agttctcata 2160  
taacaatgat gctattatca agcctaacaa tattagtatc atctaatacc taaccataa 2220  
tcaaattaac tcaattgtcc caaaacagcc ttttccaagt aggttttgtt caatcaggat 2280  
cccgacaaaag tccacacatt acattgggtg ttatatctct tgagtctttt taatctgtct 2340  
ctgttctctc actctcccc attaacacat tagggaacat gttttgaata atttggaac 2400  
atagccatcg agtactctta ggaaagagta atggggttga ggatggttaa tttagcccat 2460  
cctaacttct gtgagatttt tticagaata ttttgatgg ttctctcact ttgttatta 2520  
agcatttggg aagaagattc tgcagcctac tcagggtgagc caatctcatg gcattgaaca 2580  
gagaagatat gttttcacgt ctctaaccag tgttttcat agtgtaagtc aggcctttct 2640  
cctttgatct aagtgaacc aagaggttag atactccctt ttcttttagtt atattatggg 2700  
cttcatgtaa ctccaaattg tatttcttcc tcagctattt atatatattt ttgggtggtg 2760  
gttctattgt ttacaaaatt taagcaagag gtggaatagc agagtgcata agagcaaga 2820  
ctgtctggagt caaatcttga ctctgggccc ggctcagtg cttatgcctg taatccagc 2880  
acacgcctgt aatcccagca cagccttga atccagcact ttggggagcc aaggtgggaa 2940  
gattgccaga agccagggtg ttgagaccag tctgggcaac aaagtggagc accatctct 3000  
gttaaaaaat taaaaattag ccaggcacag tgatgtgcac ctatagttcc agctactcca 3060  
gaggctgaga caggagatc atttgagccc aggagtttga ggctgcagtg agctgtgata 3120  
gcaccactgc actccagcct aggcgacgga gcaagacact gtctctaaaa a 3171

<210> 146  
<211> 2002  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nbla21255

<400> 146

```
atgttttgggt ggattaaaag tggaacagat tcaagggtat tagtcaatt ctgagctgtt 60
ttgagtttca ctcagcaaag gtgggtaaga aggaggctac ctctgagct gtatgttaat 120
acttcttata cttatttata caagttcctg aggtctccaa ttgtcccaga ttaggaagg 180
ctgcctgtgt ttttatgtta ttgacagggt ggatgaaaaa actaaaacca aatattttca 240
tgtgagcagg gattagaggt acctgggatt tagggaaggt gaacgcagta caagtga 300
tttttcccta aacttcattg cttctagacc agcctgaagc ccctgtgtat ctgttaattt 360
agtctggtgc ttttgttgc cctgatttag ggacattaga tgagaagcag taggcctaag 420
aaaggggagg taggtggcat ccatgtgtgg tctgtagttc aggacaggaa aggggaatatg 480
tttgtgcctg ttgagggtca tcagaaagga gacttcagga gagaatttgg cttttggggc 540
ctctctctgg agtgagacta ttcttcattg atgatgttca gattgtgggt gtctccccta 600
ctcccagttg ctccctgacac tatcaacaat catgtgaaga ctgtctgaga agagcagaag 660
aatctacact tctttgcacc agagtatgga gaagtcacta atgtgacac agcagtggac 720
atctactcct ttggcatgtg tgcaactggag atggcagtcg tggagattca gggcaatgga 780
gagtcctcat atgtgccaca ggaagccatc agcagtgcga tccagcttct agaagaccca 840
ttacagaggg agttcattca aaagtgcctg cagtctgagc ctgctcgcag accaagagcc 900
agagaacttc tgttccaccc agcattgttt gaagtgcctt cgctcaaact ccttgcggcc 960
cactgcattg tgggacacca acacatgac ccagagaacg ctctagagga gatcaccaaa 1020
aacatggata ctagtgcctg actggctgaa atccctgcag gaccaggaag agaaccagt 1080
cagactttgt actctcagtc accagctctg gaattagata aattccttga agatgtcagg 1140
aatgggatct atcctctgac agcctttggg ctgcctcggc cccagcagcc acagcaggag 1200
gaggtgacat cacctgtcgt gccccctct gtcaagactc cgacacctga accagctgag 1260
gtggagactc gcaaggtggg gctgatgcag tgcaacattg agtcggtgga ggaggagtc 1320
aaacaccacc tgacacttct gctgaagttg gaggacaaac tgaaccggca cctgagctgt 1380
gacctgatgc caaatgagaa tatccccgag ttggcggctg agctggtgca gctgggcttc 1440
attagtggg ctgaccagag ccggttgact tctctgctag aagagacctt gaacaagttc 1500
aattttgcca ggaacagtac cctcaactca gccgtgttca ccgtctctc ttagagctca 1560
ctcgggccag gccctgatct gcgctgtggc tgtccctgga cgtgctgcag ccctcctgtc 1620
ccttcccccc agtcagtatt accctgtgaa gcccttccc tcctttatta ttcaggaggg 1680
ctgggggggc tccctggttc tgagcatcat ctttcccct cccctctctt cctccccctt 1740
gcactttgtt tacttgtttt gcacagacgt gggcctgggc cttctcagca gccgccttct 1800
agttgggggc tagtcgctga tctgccggt cccgcccagc ctgtgtggaa aggaggccca 1860
cgggcactag gggagccgaa ttctacaatc ccgctggggc ggccggggcg ggagagaaag 1920
gtggtgctgc agtggtggcc ctggggggcc attcgattcg cctcagttgc tgctgtaata 1980
aaagtctact ttttgctaaa aa 2002
```



<210> 147  
<211> 3112  
<212> DNA  
<213> Homo sapiens

<220>  
<223> nbla21345

<400> 147

```
agatttttag caaatacccc ggctcgact acccgagat cgtgcgctcg ccgtgcaaac 60
ccctctaaa ctatgaaact gccccgctcc agggaaacta cgtgccttc ccctcggacc 120
ctgcttattt tcggagcctg ctgtgcagca aacaccggc ggccgcccgc ggggccactt 180
gcctggagag gtticatctg gtcaacggct tctgccgcc tccgcaccac caccaccacc 240
accaccatca ccaccaccac caccaccacc gggcccagcc gccgcagcag agtcaccacc 300
ccctcacca ccaccggccg cagccccatc tgggcagctt tcccagagac tgcagcagcg 360
actccgagtc cagctcctac tcggaccacg cggccaacga ctccgatttt ggctccagtt 420
tgtccagctc cagcaattct gtgtcctcag aggaagagga ggaggaggga gaggaggagg 480
aggaggaaga ggaggaggag gaggaggggg gcagcggggc ctccgattcc agtgaagtca 540
gctcggagga ggaggactcg tccaccgagt cggactccag ctccggctcc agccaagtgt 600
cagtgcagag catccgattc aggcgcacca gcttctgcaa gcctcccagc gtgcaggcgc 660
aggccaactt cttgtaccat ctggcctccg ccgcccgtgc aaccaaaccg gctgctttcg 720
aggatgccgg cagacttccc gacctcaaga gtagtgtcaa agcggagtcg ccggcggagt 780
ggaatctgca gagctggggc cccaaagcat ctccggtgta ctgccggcc agcctgggga 840
gttgtttcgc tgagataagg aacgataggg tatctgagat tacattccca cactctgaaa 900
tttccaatgc tgtaaagaga aaggcggtag tggcggaaga ggttcggcgg ctgatggcgg 960
atcaggatcg gaagcctgcg taactttctc cttgatccg ggagtctttc cactggattc 1020
acaatgacat ctttcaaga agtcccattg cagacttcca actttgccca tgtcatcttt 1080
caaaatgtgg ccaagagtta cttcctaata gcacacctgg aatgtcatta caccttaact 1140
ccatatattc atccacatcc aaaagattgg gttggtatat tcaaggttgg atggagtact 1200
gctcgtgatt attacagttt tttatggccc cctatgcctg aacattatgt ggaaggatca 1260
acagtcaatt gtgtactagc attccaagga tattaccttc caaatgatga tggagaattt 1320
tatcagttct gttacgttac ccataagggt gaaattcgtg gagcaagtac acctttccag 1380
tttcgagctt cttctccagt tgaagagctg cttactatgg aagatgaagg aaattctgac 1440
atgttagtgg tgaccacaaa agcaggcctt cttgagttga aaattgagaa aacctgaaa 1500
gaaaaagaag aactgttaaa gttaattgcc gttctgaaa aagaaacagc acaacttcga 1560
gaacaagtgt ggagaatgga aagagaactt aacctgaga aagaaagatg tgaccaactg 1620
caagcagaac aaaagggctt tactgaagta acacaaagct taaaaatgga aaatgaagag 1680
ttaagaaga ggttcagtga tgctacatcc aaagccatc agcttgagga agatattgtg 1740
tcagtaacac ataaagcaat tgaaaaagaa accgaattag acagtttaaa ggacaaactc 1800
aagaaggcac aacatgaaag agaacaactt gaatgtcagt tgaagacaga gaaggatgaa 1860
aaggaaactt ataaggtaca tttgaagaat acagaaatag aaaataccaa gcttatgtca 1920
gaggtccaga ctttaaaaaa tttagatggg aacaaagaaa gcgtgattac tcatttcaaa 1980
gaagagattg gcaggctgca gttatgtttg gctgaaaagg aaaatctgca aagaactttc 2040
ctgcttacaa cctcaagtaa agaagatact tgttttttaa aggagcaact tcgtaaagca 2100
gaggaacagg ttcaggcaac tcggcaagaa gttgtctttc tggctaaaga actcagtgat 2160
gctgtcaacg tacgagacag aacgatggca gacctgcata ctgcacgctt ggaaaacgag 2220
```

aaagtgaaaa agcagttagc tgatgcagtg gcagaactta aactaaatgc tatgaaaaaa 2280  
gatcaggaca agactgatac actggaacac gaactaagaa gagaagttga agatctgaaa 2340  
ctccgtcttc agatggctgc agaccattat aaagaaaaat ttaaggaatg ccaaaggctc 2400  
caaaaacaaa taaacaaact ttcagatcaa tcagctaata ataataatgt cttcacaag 2460  
aaaacgggga atcagcagaa agtgaatgat gcttcagtaa acacagaccc agccacttct 2520  
gccttacttg tagatgtaaa gccatcacct tctgcagcag aggagattt tgacatagta 2580  
acaaaggggc aagtctgtga aatgaccaaa gaaattgctg acaaacaga aaagtataat 2640  
aatgtaaac aactcttgca ggatgagaaa gcaaatgca ataaatâtgc tgatgaactt 2700  
gcaaaaatgg agctgaaatg gaaagaacaa gtgaaaatg ctgaaaatgt aaaacttgaa 2760  
ctagctgaag tacaggacaa ttataaagaa gatgagaatg tgcctactgc tcctgacct 2820  
ccaagtcaac atttactgg gcatgggaca ggcttttgc tlgattccag ctttgatgtt 2880  
cacaagaagt gtccctctg tgagttaatg tttcctccta actatgatca gagcaaattt 2940  
gaagaacatg ttgaaagta ctggaagggtg tgcccgatgt gcagcgagca gttccctcct 3000  
gactatgacc agcaggtgtt tgaaaggcat gtgcagaccc attttgatca gaatgttcta 3060  
aattttgact agttactttt tattatgagt taatatagtt tagcagtaaa aa 3112

<210> 148

<211> 1921

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21410

<400> 148

atacattttt tttttcttta agaaaagggt agctttttat cttgcaggct tttcacccctg 60  
gttttgataa tggctcttcat tccttaaaat aagtatccct aaacacaaa gggaaggaaa 120  
taattattga gagttttttag agaccatttt tcatttttaa aaatgatatc agagtattga 180  
gaatagctag ttttcttaga tgctgttttag aagatagaga tggagaagaa tattattcca 240  
agcatacatt aatgtcacca catttagttt ctttaaatgc ctttgtttaa acttctgatg 300  
tttgatttaa aaatactttg aaactgctgg atgacatata aataacattt cttaatcatt 360  
acataattctc aaaaattccc caaattagcc aactacatta gagtgatttt tgataagaac 420  
atctgaggcc aggcgatttg gtcattcct gtaatcctag cactttggga ggccgagatg 480  
gtgtatcgct tgagctcaag agtttgagac cagcctgggc aacatgggtga aaccccatct 540  
ctacaaaata taaaaaaatt agacatagtg gcttgtaact gtagtcccag ctacttggga 600  
ggctgaggca gccagctac ttgagctcag gaggtgaagg ttgcagtgtg agattgtgcc 660  
cctgcacttc agccaaaaaa aaaaacatct gtagtgagca gccaaatgta ctataaaatt 720  
tggtatttta tcctacatga tttttctgtc attgaaaaat agtattttgc agtaggatgt 780  
tcagtacta cttattaaat gtatagaaga taacatagct aaggaagaaa actaccattt 840  
ttggcaggga gaagtggaat ttaatagaaa tcattgattt tcatgttaat agtatatact 900  
tatgaattat accaagaatt gacctattta gagatacttg gttgaaatac tcaggattta 960  
  
atgtgtagat aagttcttta taatgtgagt tatttttagt cttggtggtt ttgttttgtt 1020  
ttcagttttt atttattttg atttgggaat gggagctggg gacatcaaag ccatatagtt 1080  
tagaaaattt cacattactg aaataatctg tatccacaat agtaagcatt tcttcttttc 1140

ttgctgtaat ttcatgctcc acctacaata tggcttttac tttttttta ttttttattt 1200  
 tttttaccca aggaataaat tatcctgaca gtctttaatt ttgggtatgg attagttaaa 1260  
 tgtaaggatt gttgatttga tttagtaatg tgagacacaa tgtttatgtc ctcattatct 1320  
 acagtagatg gatagttttt tctcctgggc tctaagaata gtatttctta atgtgtggcc 1380  
 catgattggc attaggcggt tttgcttgac cacttgtaa acatgatattt tttctaggta 1440  
 gtgtttgcca tttgaatgtc tttgtggaaa cagactcctt aatagcttag ctataatttt 1500  
 ctaagttaac atctttacct gccttgtttt ttttaattctc ctaatcttac taatacctta 1560  
 gcattagttt tgcttccatt atcagtgcct ccaacttctt gttttatgtg ctttaaaatg 1620  
 attatatatg ggctgagcat ggtggctcac tcctgtaatc ccagcacttt gggaggctga 1680  
 ggtgggtgga tcacttgagg ccaggagttc cagactagtc tagccaacat ggggaaacc 1740  
 tgtctctaca aagaatacaa aaaacattag ccaggcatgg tgggtcatgc ctgtagtccc 1800  
 agctacttgg gaggtctgagg caggagaatc gcctgaacc agaaggcaga ggttgcagt 1860  
 agccgagatc gcgctactgc acttcagcc tgggcgacag agtgagactc cctctcaaaa 1920  
 a 1921

<210> 149

<211> 2099

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a21522

<400> 149

tttaaattca gcttgtgact ttgcacttca ggattctgag tgttctctgt cttcttccctg 60  
 cattgttttt cttataccat acaggttttt cattggcctt gactttttgt tgtaaactca 120  
 ttcttctttg ggttattttt catttgtttc tgcgtaatat tatttgtttc aaactaaaaa 180  
 taacattcca cattttaatt gatgtcgga ctcttaatct acttaaaatg tgggctgaag 240  
 ttccatgatt ccagctagtc tggaataggt catttaactg gatgttaatt cacctacatt 300  
 gtccctaag tgacatgttg gtccattctt gctgacatat ttgtgggtcc tggtacaac 360  
 catttgggta gatttgctga ttctctttt ctcttagtg gaagagaaa ccaataccca 420  
 cctcctcttg ggcatgtgct tagacgcctg tgctcgctac cttctgttct ccaagcagcc 480  
 gtcacaggca caaaggatgt atgaaaaagc tctgcagatt tctgaagaaa tacaaggagt 540  
 gacctggcta ctaccctgga tgcacagggc cgctttgatg aggcctatat ttatatgcaa 600  
 agggcatcag atctggcaag acagataaat catcctgagc tacacatggt actcagtaat 660  
 ctagctgcag ttttgatgca cagagaacga tatacacaag caaaagagat ctaccaggaa 720  
 gcaactgaagc aagcaaagct gaaaaaagat gaaatttctg tacaacacat cagggaagag 780  
 ttggctgagc tgcacaagaa aagtagacct ttgacaaatt ctgtcaagct ctaaatccat 840  
 ttttgtagtag ggagaataat gtctagtaat gtggaagaat agctatcatt cctgtctctg 900  
 tggcaccgca tcaatggctt aaatctgtcg ttttgatat tcaggtttcc tcaatttagc 960  
 cttagtgaag gaggggttgt acacactgcc atttttgtat tttaaaggaa aaatgacttt 1020  
 cattccaac tgattatgac ctttcaggat gtcgtcaagt gatgctttca gttgtaacac 1080  
 gtgacttggg gctgtccctg ctggtctaag tagaactgta gattcatatg ggctgggtgt 1140  
 cctgtgcgct gtgggtgtgg tgattcagcc tggcatttct accataagtt tttggtctgc 1200  
 tgatttgctg ccctgtcttc tcttacttta ctttatcaat acctggcaaa ctgaccagaa 1260

ttaccttcct catggcaaag ggggattatg gtgaattgtt gttcttatag tctgtttcat 1320  
gaagcacaag tggaatttaa tacataaaag agaaaaatat cttagtttgc taccagcatc 1380  
cagcatgaag ttgtaaagt gggattagc acgtgacagt atagcaccca tttgaattta 1440  
aataaaagt aaccatattt atctggttat ataaaactaa aaatgggggt gtttatataa 1500  
aactaaaaac taagaatgat gtaacctttt gtctgtgtta tctgaacact ctacttcctt 1560  
tgcagcctta gtcacacaac tgagtcactt caagtactct ttaaggacac acagcccagg 1620  
ctgttctgag tcagaatagg cccctacagg tatattttta aactcttcgt aattctaata 1680  
tgtactgctg gtatagctga actactgacc tggatcttag tcctagcctt tttgcttttg 1740  
caatttcagt atcttcactt ctaaactagg gaaacactgg gattctttct tagctgtggg 1800  
ggaaggattt tggtagatg actttgaatg aatagactgc tgtgctgaaa gagctttatc 1860  
acactgtctc aaagtatgta aagatacata ggtggatgct cttactgcag cagtcataaa 1920  
tacattttta gccatttacc taaggaaaaa gacagttttt ctaggtacca tgaaggaaga 1980  
ttgacctgt tggtagcct gtgggggtgg gatgtgagtg ggactgataa actgatactt 2040  
ttggttcgta tgtacatact ggaagaatct tcataataaa tgagactaca caacaaaaa 2099

<210> 150

<211> 2471

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21631

<400> 150

gaacggccct gcggggctgg ccggacggct gcaagaacat gctgagccca aagatcaggc 60  
aggccaggag gggtaagtcc aactttcttg ggtttctctg ggcaccgat gtgcctcttg 120  
gcaaacgtgc gcgacactt ggccagcgt caccgatgt gtcacatggg gcgggcgttc 180  
tgggaccatt gccgtgaat agtgagcatc ctctgagga agtgcccttc ctctgaaac 240  
tcctgggctg ggtggggaca cgacctgaag ttgcaaaagg gcggtggccg gcttagtgcc 300  
ccagtgggtg tgcacacttc gcccacatt ccacatttta cagaggccct cggtcgtcc 360  
aggtgacctg gtggcaactt taaggaaact ttgcttctt actaaaagg aaatgcccac 420  
gatttgcctt gtggcaaca cagaagcacc cttaccagg gaaggccatg ccctggcttc 480  
tagagacagc tgggtgcaag cgagggtctt cgttccgct gctttgcaga cagtatttcc 540  
tcaagcaggc caggggcagg caggctttcc tgccagaaca ctcaaaagc tgcagggtct 600  
gggggcagga cgggtggatg cgggagcaga ctacagacc caagagatgg gggtcaggag 660  
agtccaggac tgggctagcc agcctgtgtc cagccagcga cccagcacag tgacctgaag 720  
acttggccac tgtatggggc tagagacagc atctccatgg acaacaactt cttagccacg 780  
gaaagtgtca ttttgaatga gaacatctgt cttttacaaa aatagaatgt gtcttttcag 840  
gtggccagta tctgggaggg ctgagctcct tttgtaaca atgaagtga ggatgggtct 900  
ttggagggtg atggagcatt tgctgggag cttggaaca gtttgtgtc caccagggtg 960  
ttgcagcggg gggcctccag cctcctgtgg attcacagg aacacacca tcttattagc 1020  
acactgcaag cacttggatg attttcttg atgggaccag cttccagtg tgttcacag 1080  
acgtcaggac ccctctgtg ggtgctttc catgggctga accctgtgta cccaatggg 1140  
caaaggagga acttgcattg ctctgctgag gagggggcaa gtctagtat gaccaaggg 1200  
ataggacaag ccagatacct ctgcgagagc ttagttccac cctccactc ctgtgtaatg 1260

agctggccac tggccacatg tggtactaa gcacttggca tgtcactagt ccaaattgag 1320  
 aaaaagacac accaaatgtt gatgatttag tacaaaaaaa gaatgtacaa tatctcaata 1380  
 attatittac tgaaatgaca gtattttgga tatattgggt taaataaaaat ctattattaa 1440  
 aactaatttt acctgtttta cattctttta ctatagctac tagaacattt acaagtacat 1500  
 atgtgactca cattatattt ttatatattc tattggacag tgctagtaag agaccagtgc 1560  
 ttcagcaaag gggcttacag gcagcctgtc tttgaaatcc aggatttctc ataaatgttt 1620  
 gttttaagtc aatggttctc aaccaggagc aatttgcccc actagagaac atttggcatt 1680  
 gtttgagta tttttggta ttccaactga ggggtgctac tggcatctag tgcgtatagg 1740  
 ccagccatac agcctcttc cagtcctcag tgttccatga ggcttccacc atagggttt 1800  
 tgcacatcgt tctttccct gaaatgcctc ccacattcac atgtgcgcac atgcatgcct 1860  
 gtatgtgtgt gcacatgcgt tcatgcatgc aaacatacac acacacctta attcctattc 1920  
 accctccagt tatagtatag ttcaagtgtt gccagccagg gaagtcttcc cacacacccc 1980  
 agtccaggct ggatcctctg ctccatctct ccttttcttt atggtattta ccataggttg 2040  
 cagttgtata ctctgagtg tgactgattg gtgaatatct gtcacttgca ttgctccatg 2100  
 agcttcgtga aagcaggaac catttctgtt cggggacatc attatacccc caatgccagg 2160  
 tacctgggtg aactcaacc tgtgtttttt gactgagtg atgaatagct ggatagagga 2220  
 gaaagcattt gcctgggtgg ctggagcact gtctctaccc aagctggccc ggtacttagg 2280  
 aaatttgccc tcatctttca ctgactcata tgttgcaaat attttccaa tttgttgctt 2340  
 gccctttatt ttatatattg agtgggtttt ttttctagat ttacctgttt ttaactcgta 2400  
 tatattttcc ttttagaatt tctgtctttg tttgcaatat ttcaaaataa aattgttgat 2460  
 gctattaaaa a 2471

<210> 151

<211> 2669

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21788

<400> 151

aaagcaaaact cctacctacc cgggcctcgt ggagccttcc tgcggtcctg ccatttgccc 60  
 catcctgtag acagggctgc aggaagcagc ccagccagca accagtgtgg agggagaggg 120  
 agtccaagc ccaggccggc ccctcccat ctggggctgc cctgcaaccc tcagtggtaa 180  
 cttaggacag ctctatttc cccttggct aaaagggtct acaccagtgt gtcaccactc 240  
 ccaaacagtc cccttcttg gcctttgcca ctttgttgaa tgaagacctc acctgcagtt 300  
 aagcaaaata ttaacatgtg agatgccttt caagatgcaa aaggatattt tccttctaaa 360  
 atcacatggg caggaaggct ctgaagatgt tagagcccca gtggactgga gaaagccagg 420  
 aagaaagcag tgtgggtcct gcagtagccc ctgcccctc tcctgcctcc tgcctccca 480  
 ggacgcccgg ggccgaccg ggccgacct tgcctgctc ctccgttcg cctgggctc 540  
 catgctttca gctaccttct gcatcttcag gtggagccca gtgacagata ctgcaggaa 600  
 ggagaaagca ttcaaatggc ttaggttgat ggaaagtac actgattaca gccaccatgg 660  
 tagatgcttc acgtgtacct taccaaggaa ggcacccag ccacgatcat aggcgactct 720  
 acaaaccag ccccttactg aactccaata ggccaggtg gcttcttcca gactcaggct 780  
 ggcccttggc acagtgcctg tgctatgtat ccagaggcct gggcccat cctgacctg 840

tttctccctt attggaggcc ctggcatttc cgaaccact cactctaag aattggattc 900  
 tgtacagtta aaggaacagt gtcccttccc cgagagggtg agaaaagggtg gccaggaggg 960  
 agagggtcct gggaggagca tttatgcgcg atgctgagag atgggattct acggaggggag 1020  
 gcagcattgg ctctcagctc agcaggggct gtgccccagc ccaggacggg tgccttgctc 1080  
 ctgctgtctg gcaggcgtct gccgcaccc ccacactttg cttttgtctt cagtacacc 1140  
 tgcctgcccc agcaggaaga gccgaggaag acgactgggg ttggtcagat ggggcctgag 1200  
 cagtcccttt gccatgctct agtaccatgg ccttggataa gtccagtctg ctctccaagc 1260  
 ctgagtttct ttctgtgtaa tgtgagcagc tcctatctga aaggtttatt gggcggattt 1320  
 ttgcagggtca tgggtgtgaa gccctagca cagtgtctgga ctgtggtcag aactcagtat 1380  
 cactggcccc catcttact gtgagcccag gacaggccac acgtcacacg tcacctccca 1440  
 caaagcccg cagagggtgc ccagggaact cttgttatgc ccagagctca gtgaccagg 1500  
 ggagcacttc ttgtgtccc ctcccttga gttctccaaa gcaggccatg gccatgatca 1560  
 caggctgagg agccaggccg ccaggggcca tcctggctct gcctcttcca tgggagcact 1620  
 tttctctctg caaagcgggg agcagtcgga cactgcccgg cgatatgaag tctgagcgag 1680  
 tcaggacagg gggaggccca gatcccaggc gaagatcagt gctctgtccc gccttggtt 1740  
 ctgggagccc tcctgtcccc tcttctcag ggactggacc caaaccaggc caggccggaa 1800  
 gactagtgt gtgttcaga tgtcacttgg agttgtgaag cttttatcaa agctgagaca 1860  
 atccctgtta actaaaatcc ctaggacaat gaactgttgt ctttatcca cttcctaatt 1920  
 atagaagtgt cctgccatgt agtaagtact cagtaaagt tagcatggta gcagataaag 1980  
 tagaaaatct cttttcccc atgacctcc ttgtgaagag gtttctaaaa gccagtggc 2040  
 ctttctccct gagtaaagag ggtgtggtaa cttccagaaa cgtttcttgc ctttgagga 2100  
 tatgtggcac tgagtagtca ccacacaagc tcacccccg gtgcggagat atggctactt 2160  
 caggaattgg gaggacccc cgctgcgccc ggaatgtgct ctggcaatgg ttgaccttc 2220  
 tttctgtca tttctttat tttgtgtgt ttccattcat ctctgttcc tcaaagctgc 2280  
 acacagcccc cccttctgct ggccaaggct tggtagcaa agggcctgtc tccggcgat 2340  
 ctggctttcc tcgctgtcag ccttcagggt cctgaaagc tggcgaagg ttctgagtca 2400  
 atgctggggt tgagtgggag tttagaacat cactgcggtg ccgcagtcac tcttgacgt 2460  
 ccaogtcctc ttggaagttt gaggcaggct cagctcagcc gttcgcttgc gtatcctcat 2520  
 aatcaggtag aaagtctggg ccggggccag gggcagtggt gcacgcctgt aatcccagca 2580  
 cttttgggag gtcgaggcag gaggattact tgagcttagg ggttcgggac cagcttgggc 2640  
 agcatggtga gacccatct ctacaaaa 2669

<210> 152

<211> 1969

<212> DNA

<213> Homo sapiens

<220>

<223> nbla21897

<400> 152

gagatttgca aaggcatttt aaagaaacgg tgcctagagg ctgggcgcag tgtctcacgc 60  
 ctgtaatccc agcactttgg gaggccgagg cgggcggatc acaacgtcag gagatcgaga 120  
 ccaccttggc taacacagtg aaaccccatc tctactaaaa atacaaaaat tagccgggag 180  
 tgatggcagg tgccttgaga agtctgaggc ctcttgaga atgccttaag gaaaatacgg 240

tcagaagggg gttgtcaaca gtgaagtgg gaaaacagcc ttctggaggt gtggctcgga 300  
 ggcagagcat cgggtgtgc tggtcagatg ccattccccg ttggcgtgt ggaccagctt 360  
 taccagtggg gatccgtgc tttccaagag caagccctta cgaaggtgga ggtgggcagg 420  
 tagggaggag ggaagattta ggaaggaaga ggagcttcaa gaaggcagcc tttgtcttct 480  
 aaccagagcc actgagactc taggccatcc tctgctgtgc cccatgggtg ctattttggg 540  
 tacttaccac ttcctgtccc cctcctggca tctcacaggt attcaggcag ctttgcaccc 600  
 tgggcttccg ttattcctgc tgttgatacc acccacgctc actgggtgtca gcagccaccg 660  
 ttgtacttgc tcatacgcta gtgggttaga aatggggagc atctgccgag ggatctgtct 720  
 tgtggcctga cctgggcgtt gatggctgtg gtcccccagg gcttcgtggg tgtcccatct 780  
 gagaaggctg gaagtgtgcc aggggcttca tgggggtcct gcaggacag tccaaggtg 840  
 acagctgtg cacctcgagt gcggcctgaa ctggagaggc acctgcacct ctgacatggc 900  
 ttggatgct gcacagcatc gtcacacctg ctgtgttctg ttggttccag gccagtgcgc 960  
 agagctcgtg cagatttggg gggggcctcc ctctcaatgg cagggtgtca aagaacctgt 1020  
 ggacatggc atagccacc cagacgttca ctcccttcca atccactgg agtttccgca 1080  
 gccttcccc atctgaatgt actgaagaac tgacaccac catctgggtt taaaatgtt 1140  
 agaatttgta ataatttacg tattttctag agagtgtgt aacatccata aaaacacaga 1200  
 ttttctagga agttactgtg aaatctacaa aagcaataa acatttcctc ccaggtgtg 1260  
 agctgtgagg agagcatcag gggttgggct ctgctgcctt tccccgaaga actcactcg 1320  
 caagccgtca gaagataatt ctgaaacaaa tgcctgccac tctttgatta caaaaatgac 1380  
 ggatgagctg tatcaccata tgcctgagaa tctgtgtgtg ttaaaggact tggatcgtct 1440  
 tcctactgag acgtggcccc agcttctccg tgagctctgc agcacacctg ttcccacct 1500  
 gttctgcccc aggattgtgc tggaagtgtc ggttgtgtc cgaagcatca gcgaacagt 1560  
 ccgccgtgtg tccagccagg tcaccgttgc ctcagagctg agacacaggc agtgggtgga 1620  
 aaggacgctg cggctctgcc agcggcagaa ctacctgct atgtggatat cagactactg 1680  
 tccccgtgc tcagcctgat actgttactc attgcgtgg agttgggtcaa cattcatgct 1740  
 gtttgtggga agaattgcga tgagtatcag cagtacctaa agtttgtaa gtcgatctt 1800  
 cagtacacgg agaacctggg ggcttacacc agttacgaaa agaacaagt gaatgaaact 1860  
 atcaatctta cacatacagc tttgtgaaa atgtggactt ttagtgagaa gaaacaaat 1920  
 ttaatacatt tagccaagaa atccacaagt aaagtactct tatgaaaaa 1969

<210> 153

<211> 2573

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22116

<400> 153

gatatgctgc ttagtttcac taaaagcaga ccctatacct agagaagtca ctggcttttt 60  
 attggtcatt ctcaatacag aaatacttag gggagtctta accctgccat ccccggttga 120  
 atctcttggg ctttatctaa gctacttgca gttaatattc agttaagcaa aggtatggcc 180  
 agtagtgcaa gtatctccca gtctctgagc tctgaacaag aggactgaaa ttcagcattt 240  
 gtaaatgac agtttgatgg gcctgggatt tgaagtgaac tcagcacaca attctgaacg 300  
 tgtatttgca tgtggactgg gaaggaaata aatgggaact tggaaataat ggaatatttc 360

tcctatgaaa gaatttttcg tagaagattt gtttttgata taatctttct gttggtttagc 420  
 ttttagtggtt ttcatcctt ttctgatcca cactccttta agtgaccaa tgaatataac 480  
 ccaacatgca ttgggaatgt gtttaatat aaacaatgtc taactgaatc tgcaaatgcg 540  
 ggaactgaga taccacctcc atgtgcacac ctgtgtgtac gagtatctta tacaacttgt 600  
 agcatttact gccacttaat tgggttgaac ttgcaagata aacttttggg aactgcttag 660  
 tgccatcgga gtctccttta gaagctgcca tcaggcaaat gctatcccat aataccagca 720  
 gtaagcctgg caacatgttc aacagattta gtaccaaga ggaaatcaac agcgatagta 780  
 gagaatgagt cagatgtagt gggataaata ctgacctagg aagaaggagc cccggagtct 840  
 aatatgagct ttattactaa attgctatgt gacgctaggc aagtcactta acctctccat 900  
 ggctgtttcc tcatctgtaa aataagtgtt ttggactaga tgatccttag ggtctttcca 960  
 aaagtctaac attctatggc attatagggt gccttgcaaa ttcagcctgc tatagtgtatg 1020  
 gcaaatatca cgtttaagtc tgagtctctt atgttgcagt taaataaaag aactatgtaa 1080  
 gatgattttt aaaattcaag caaatgggcc ggtgctggtg gctcacact gtaatcccag 1140  
 cactttggga ggccaaggca ggcgatcac ctgaggtcag gatttcgaga ccagcctgac 1200  
 caacatagag aaaccccatc tctactaaaa atacaaaatt agccgggtgt ggtggcgggc 1260  
 gcctgtaatc ccagctactt gggaggctga ggtgggagaa tcgcttgaa ccaggaggcg 1320  
 gaggttgttg tgagctgaga tcatgccatt gcactccagc ctgggcaaca agagtgaac 1380  
 ttgctctcca aaaaaaaaaa ctcaagcaaa tgaagttcat aataataggg gatgttgata 1440  
 aaacttgttg cagccttcca attcatttac agttgttctg ttttgtttt gttttaatgt 1500  
 ccattttctg ttgactgttc ccagttttca tttccatac agtctgtatg taaagtctgg 1560  
 ttttcattaa gctgtggcca gtatttgcca ctacaacaga aacacactgt cacacttgct 1620  
 agaataaac tgtacttggg cttctcctt cctgtgaagt agtgctgggc tttctagagt 1680  
 ttaattctca agtggcacia gatagcagag cccatgcatt ttaatggctg agactgctaa 1740  
 gagtgaacct aaacacttac aagtgtcaga gagaaatgaa aaagtaatta catgctatta 1800  
 gcattgagaa atgttgacaa attaatgtt ttgggaacaa agatagcatt tctgatgaca 1860  
 actcccacag tgattggcca gttgtatgat gattacactg ctggaaagag ggtaaaactgg 1920  
 gagttagtgg atggtcccaa tgccctgcct acagcagagt gccaccagc cctgagtga 1980  
 aaattcaagt tcaatgtgtg tgcttgtgtg tgggtgtgct tatggaccg caaataccat 2040  
 attcattatt gatgataaga tcttcacaga atcctgtagc tactaatgca ttgagtttt 2100  
 aatctcagta catcagccag gaggagccag atcacagggt agtgatgtct actgggatta 2160  
 tactcataac atctacacaa aacaagttga gaaggatcca cgttttcatt gtttatcaga 2220  
 attgtatctc atttggctga gcatctactt tgtcagaatg tgttatctgt aaacctgtg 2280  
 tagtgaatt cttctgtaac ttggattaa aggtatttat ggtctttttg tttgtttgat 2340  
 ttttaagtaa gttatttctt ttgtagacct gctgatgta tggttccatc cttctgacct 2400  
 cagcatcaa tctttttaag gatttttgtt ttcaatattg ttattttaaa ttgtggttga 2460  
 agcaatagaa aattgaaata tggattgtgc atgactgtgt cttgagtgtg aaaatattgc 2520  
 agtttgaaac ttggacctaa agtattgcaa ataaaaatga caaacatcaa aaa 2573

<210> 154

<211> 3324

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22223



&lt;400&gt; 154

caaacacagg ctgaaaaccc atgctgctgt tatacacaat ggcagtatta acaagcattt 60  
taaacctttg cacatgatat tgaacctgtt cagttttaca tgacaatatt aatactgttt 120  
atagctagaa gtttgatttc tgaattcttt gagattttag caaaacagtt tattatacac 180  
tgtacatttt tttcacagca attggaaaaa aacaaccact tgcaatcatt caataaccct 240  
gaagaatttg gttcctgagt gtacaaactc agagcccgga agccaagaag ggtccttggc 300  
ctgcacggtc ttagattgac tccaagtctc tgtgagcagt gacttgaacc aaacacacca 360  
ggaataatcc attctttggg gcctctttcc aactcgaggt tgttttcttt caagatactc 420  
taatcagcca tagaatttag tgtaaatttt tttttttcca aatagatatc atattcaaaa 480  
aaggcagcat tcaaattata tagaatctag tttttaaaat cagcacagat ctcttaaaa 540  
actgtgaact atgttttgaa atactcgtta ctaaagctgt ttataaacca caggtgccat 600  
aagatcccca aacggactaa agttatctct gctcttccat ggtcttggtc ctctcgtttt 660  
ggcttttagga agcatgtctt taacagcacc gctcgttcac aagttccccc atcaagttgt 720  
ttggaggcct tcagctttaa atgtacaggc ttaaagtgcg cttgcaaacg tttgctctcc 780  
ttttttctg aatgttgatt gccttagctg gccacctggt gttctgcatg tagccttctg 840  
tggtcatgtg aaaggagaca ggctcttcta agttgagttg ggatttttgc actcagtgaa 900  
aagctgaagt gcaaaagagc tatcaaagac aagaggataa aagactggga tagtcttttc 960  
caaggacctt ctttagaggg ccctaaagac ctcccttggg aattctgggg aaaaagaaaa 1020  
agtaatcttc tacttgcttc aagatttgat ttttttaaaa aagcctgcga cctattcaat 1080  
acattatgct taaatttagc gtttctctgg aattcctgtc tctcctttta aagaaaggag 1140  
agaacatttt agaacaatag ttctcaaagt gtgtccccc gacaagcagc atctgcaaca 1200  
cttaggaagg tcttcgaaat actaatttgt aagccccacc tcaggcctac tgaatcagaa 1260  
gctctggggg ttgggtccag aagtcgtttt tagtcaaccc tctaggtgat tctgatgctc 1320  
gctaaagggt gagaactact gctttagaat gaagtcgtat aataaagtct ctgaaaaggc 1380  
cttattcaga ataagcaaga aaggttctgt gattcacttt tgcttctggg gctggcaaaa 1440  
accttctctg aaccacaca ccaagttcgt agttggtagg tgcccagcca agtcctgaca 1500  
tcttcagtc ccctctgcag agggcggctg tacgatgttc acatgtctgc gtttggtcag 1560  
acatcatctc cttggctgcc ctttgaaacc aaatcacttg ccttggggat aaagtgtca 1620  
attggcatta gtgagaagcc catcctatcc cttgacatac ttaatcatat atctctccag 1680  
agaactcacc tgacaaatgt ctctgagcac aggtgacac caaagtggca caactgcaca 1740  
gttctcagat ttctttgcac agattgattt ttattgcggg ttttgttggg gtgtcttaat 1800  
gttcattctt tttccactgc ccattctctg tgaaccata cctctctaga tggagcaggt 1860  
ggccactggt gcctcactat cagattgaaa accactacat ccagctacc tataatgctg 1920  
tcagctcaaa atcatagcca ggtagttctt gaactcagaa cttaaattct gcacgtggca 1980  
ctccaccact gactggaccg agctggcata tgtgttttct ttgtgtttct acatcaaaaat 2040  
gttctgctaa gatitgaact gttctgctga taaccttccc cgttgctata gctatttcat 2100  
tgccaaccaa ctccatcaca tggttgttga tctgctata taaagccatt gcaaggactc 2160  
tggaactgc cgccaatgac caattctga ctaaccagcc acctttctc tctcttagct 2220  
ccacgtcagc actgagacca gactcgagca cccctgtcct gtaagcgaga caaaatggcg 2280  
tgtgttattt tggggttttg tgttttttgg tgggtttctt tcttggctc tccagattta 2340  
cttttggggc ctgttctaag tgcaaaccga gcaagtttca cttgtcctgt ccattagata 2400  
caactacatc ttgcgggggt tgtttcttct ttgttcaca atgaattgca catccatctc 2460  
catcagagct gatagcctgt taataagcac tggcttaaca cagccaaccc tcctccacag 2520  
cgccatatta atggaggagg ggaggaaggt gaaatctact gcatgggatt caggaaacag 2580  
ttgtggttgg tcaggacgga agttggggta agtttgggtg gtcagaggga gttgtgctgg 2640

agattgtgaa aaatgggttc ttgaatgac tactataagg caggaaggt tcatttgtaa 2700  
 gtagtaagt gaactgaatt gcattaagag tgtgtggcct ttgttggat atactatgta 2760  
 ttttcttata tgcattgagc aaactgttc atcataatt agcattgat tctgcttta 2820  
 ttttgatcat ctttgtccac cttattagt tcttggtgt taaccgtaga tagatctgt 2880  
 aaatccagca accttgggt gctgcattcc ctttggttcg attccacgca aggagccaca 2940  
 agtgagaact ccactgtcct tagaagaaag ggcattttta ctttgaacc aaaaagagaa 3000  
 aaaaaaatca gaagtgttc atcttgaggc gaattaactg taagacatt ttaattatga 3060  
 ctactgcaat ttgacacat ttgaaataat caattcagag aactaaaga tttcacaata 3120  
 ttcatggta ttgtaaaaa aaaatactat tgtatggatt ttgtattgc tgtaagtat 3180  
 tgttttgtgt gtgtgtgtgt gtgtgtgtgt tggaaacctc tggggacatg ttatatattg 3240  
 aagtattaa actattaat tgtgtgtcta tttttggag tggaaataat tcttcattaa 3300  
 aaatgtttt taaaacaca aaaa 3324

<210> 155

<211> 1618

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a22344

<400> 155

atacatcatt agataataat gtagcaataa attgtagctt tcactacata tgaataggca 60  
 catgaatata cacttgtatt agtaaactct agtaaagatt ttactctgc ctatacaaat 120  
 tatgaattac atatacttta atttctatca tttttgttt gtatccattt aattttcaca 180  
 tagcttaaac acgaagtga gagagctgtt taggatctgg gaaataataa aaatgaattc 240  
 ttttaaaatt ttttctggt gaattcgaaa tgcagaacat gtctttcaag agacaactcc 300  
 cccttttct caaaaatgtc aagatcagac tagaaaaatt ttcatccaag gcaatgtgtt 360  
 atttttattg tctgaaggaa caggggagac tttcatggaa gagagagcat ggtttagtga 420  
 aagcccaggc tgagagccct tactcctgaa ctggaatccc accttctgc tgggctggcc 480  
 ctgtgtgcaa gtcaaccagg ctcatcact acatctgcaa catggagcta aggttatctg 540  
 ctcttctct gccattaga ctgtaaggag ggaaacatta gtattagctg gagagtctt 600  
 tggtttctta gcgaattgg tactaaatga tgcactgtgg ctttctaaga aaatgctttc 660  
 tatgcagtgt cagccccag gaccatgcgc aacactgcat gcagcagata gaatgaaca 720  
 taaaattata tgcataactt tttttgaat atcaccttg aaagtattgg gttttcattg 780  
 ctgtaaaatc atgttaccag gagtcacttc acaaaatact tgataataga aggatcactt 840  
 gcattcta at caccacag tacaattttt ttaaaggaag cacaaaaata aaattataac 900  
 aaatatattg gccaaagcag actgatgtag atttgactt atattttaaa atcttaaat 960  
 attataagaa taataagttt tactatttgg tttaatttt taataaaaaa aaaaaatgaa 1020  
 aagtttgacc attcaaacat catttgtaag ttaaggatta gctataaaag tcagacatag 1080  
 acatttgcaa cctgtttttg gaagctacta tgaattgtc aattgtttt catttatggc 1140  
 ctgaaatttg aaagctaagt actgttatgt gaacagcgaa ttggaaaagg gaataaaata 1200  
 ttgtgtactc agtgggtgatt atgcaccagg cacaccacat tcttacctg ttttcatcc 1260  
 ctacaactgc acaaagtagg tattaatagt tccacctcag agatgaggaa cctagaattg 1320  
 taaaaatta gaggccaggc acggtggctc acacctgtaa tcccagcact ttgggaggcc 1380

gaggtgggcg gatcacaagg tcaggagatc gagaccatcc tggctaacac ggtgaaaccc 1440  
cgtctctact aaaaatacaa aaaataagcc gggcgtagtg gcggacgcct gtagtcccag 1500  
ctactcggga ggctgaggca ggagaatggc gtgaacccgg gaggcggagc ttgcagtga 1560  
cggagatggc accaccgcac tccagcctgg gcgacagagc gagactctgt ctcaaaaa 1618

<210> 156

<211> 2274

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22939

<400> 156

ggacaaaaag tagctattgc aagcaccatt ctctggtttc ctggagattt cagaggctc 60  
tgctaggtct agcgggaaggc caagcaggct gaccactgac ttcttacctt cttggatttt 120  
atcttttttc tttattggat ttcatagaat attttattgc tcttgttggt ttttcaatcc 180  
cactatttta agtcactgtt cctcagcatg gagtatggag gtgtggaggg tggaaacatg 240  
ccagggtgtg ccgtttgtac ttactttagt gagtaagcca tcaaaggtct gggaagccat 300  
caagaccttt gaacagaagt gtgactgatt cagagcattc ctgaaaaag atgagtgtaa 360  
ggagcaagga ggattgagta gggcacatct cctattctgc atcttttcac cctaacacat 420  
ccattgaaca gatatttacc gagtgcctgc ctacgctggg ccaagcaatg ttgtcaacat 480  
aggggacaga gtctctgccc tcataaactg ctattgctgg taaaagccac tttctgaatc 540  
gtatgctggt gaaaattctc tgaagaaaag gctgccactg ccaacttata tcagggcatt 600  
tgatggctct gactggcctt ttccctacca aaatgttgag ctttgggtgt ttgtgaatgg 660  
gggtagcaca tggcagagtc acacatgact agttgtatgg gagaatgata aaattccaga 720  
aacaagagtt gtagtcatcc taatagccaa gccactgaca aatgtcaact gagtagaaag 780  
taaccactga atatcgtttt aaaaagattc actgatttat ttcatctaata cagaccatgg 840  
agcctgttta ggtagcagac tgaacttcac cagccactac ttgttccctt tgagtttaga 900  
aattaaaaac aactaagccg gatattccat actgaagtct gggtttgaag ggatgtggcc 960  
aacttgtcta tccttcatga tgcaaaattt gcttttatag cataagcagc ctttgaatga 1020  
acactatctt taggtttggt gtatccgaac acagtgcctt ttttagtccg gagaccttgc 1080  
tctgttgaac aggagagcac tggagggtcaa gctagacctg gaactaacc tatttctccc 1140  
attcttcaat tctggaggcc attcacattt cactcttttt cttccttcca tacttctcct 1200  
ccatctgtgt ctggttttta tttactgat tattgcatta tgctctaata atggttcaga 1260  
tcatttttga agataatgaa tgttcccacc acaaagaaac gataaatgat tgaaatgatg 1320  
gatagttaa ttaccagat ctgatcacta aatagtttag agctgggacc aagctgaaat 1380  
attgagatca aaaagtgggt aattagctga gactggtttg gccagctggc ttggccagag 1440  
aaactgaata cagcaaaggc atccaaaggt ctttgatttt atagctccat gtgggaaggg 1500  
aagtcaattc ctgataacca tgatatgtta atccactgg taaaaactcc agatgacaaa 1560

aaataatgca aagttgggaa gaactgaaaa atgtttccaa ttcatgtttg tagttttttc 1620  
tataactagg agtttcggaa gcaggactaa gactcctggg aagaagggt ggcaaaaggg 1680  
aggatatatt tggggaccca gatatgcaca ctgagattta aagaagaacc ctttgagta 1740  
taggtatgtg taacacaaag tcaccaaaga aaaaaatata catttccaaa taaaagccca 1800

atcttagcct ggaccaatit ggagagagt agaaaattct ttgacttcca accattgtag 1860  
 aaatctttcc tgttagtttt gatagtaggg tctttcggct atataattcc aagcctgac 1920  
 aactggcatt attaagtttt ctgtcatggc tagttcagca actggagtag atatagattt 1980  
 atatgtggat aattagctcc agtttgataa gtaaacaag ataatgtcat gggctgatgg 2040  
 aataactgag ttttgaaac ttttctata ttgagtttg ctatgtggt cataacgcat 2100  
 tagagctggc ggtgtccaca ggagcacagt cactcagggc tcatgtttct tatgcaaaag 2160  
 acaaactgt caacgggaac agcaattgtg ataaggaagt aaaatatggg agggatctgt 2220  
 ttcctgttgg tgattgtcc tacgttacct ttagctacct gattaaaaga aaaa 2274

<210> 157

<211> 2653

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23084

<400> 157

ttgaacataa aggacactca ataatttttt tcaaaaatta agaaattgaa agaaagggaa 60  
 atggcatttt taattaagaa aaaaggcata tcctttaatg cactgtttgc taaagtgtgc 120  
 cccataatit tctagaatac ttgttcaaaa attcagattc ctggatgcct ccaggcctgc 180  
 tgaacaaaa tctcctaggc ttagtaacca taaatattaa catactctcc agggacttgt 240  
 tatgaacact aagtttgaag accactggtt aatatcagt gaaatttcac atctattatt 300  
 cttcctctac atgcatttca ttctatttgg tacttcaaag tgtgtacggc aaaacaacat 360  
 ctttaaggctt aagacagatt atcatggcac tcatgacta ccaaaaagtc acattttatt 420  
 ataaatataa ccaaaactat tttgaatat gtattattgc cataaaatgc actaagctca 480  
 taaaactatt gaagacacta cctgtacaga acttagagtc aaggtaaaag aaaagacaca 540  
 aaaatataaa gtgtattgaa caagcaaaat actaaaagat acccgaagt tcatatggtt 600  
 gcacatatit gccattagcc aacctactca ttatcctgtc tccaaggac aacaacctit 660  
 taaggtaatt aaaataattc catatgcaga catggcagg agacaaaaag agaattgggc 720  
 tgtacaatga gaagctgggt gtcacgccac tcacattcaa taagtagatg tttattggaa 780  
 caaggttctt attttattta caaaattctc tagcgttgta tacccttctc tctctccag 840  
 ggctaaatit tattcacatc ttggaatagc ctacgaggt ttaccaagca cccacataaa 900  
 aggaattttt gtctggtcac agtggcttat gcctgtaatc ccaacaattt ggaaggccaa 960  
 ggcaggagga ttgcttgagg ccaggagttc aaagccagcc tgggcaacat agtgagagct 1020  
 tgcctctaca aaaaaaaaaat ttgaacaatt agctgggcat ggtgacacct gtctataatc 1080  
 ccagctactc aggtggctga ggtaggagga tcacttgagg ccatgagttt tatacctgcc 1140  
 tgggcaaaat agagagactc caactctacg aaaaaaaaaat taatttaacc aggtgcaaag 1200  
 gcacacccct gtagtcttag ctactctgga ggctgaggca ggaagatagc ttgaactcag 1260  
 gagttggagc tatgatcaca ccaactgtatg ccagcctggg tgacagaaca aaacaatgtc 1320  
 tctaaataat aataataata ataaaaggaa ttctaactct atgagatgga gggattttgg 1380  
 gggatgaagga attatagagc actgtggagt ggtagccctg ggaagccaga tggcatgagc 1440  
 accgaatgcc ttaggaaaaa ggaacaggtc agaagagtga agttggtcac agaattgaaag 1500  
 tggagaatgg tgtcacacac agagcaccta atatgcgatt ttgtaattcc taaaaatggc 1560  
 ccaagtaaca ctgcaaaaat cactgccata taaaaggcca tatataaatt gccacataaa 1620

aactgatata aactttggtt aagtccacaa cctttagctt cccctaagtg gaacctatga 1680  
tccctaagct gggttgatgc aagtcctccc aaatgtcagc ccacacaagt ctcttccta 1740  
cccacttctt acttcttctt tcctccccta gaaagttgca ggccagcaat aaagggggaa 1800  
aggggcagga actagtgaag ttgatagggg cgcctctcc tgttgagttg tctcaggatc 1860  
tccttattct agaccttgat ggcacatcct ttgaggatgc tgatagcctg ctgagcaaga 1920  
taagcagtaa cagctaagtg gtaagatact caagagtttc tggacattta gctgaggagg 1980  
gaaagaaagc attgaaatac tggaaaggaa gatctgaggc atttctaggc aaggagaata 2040  
ctgttggcaa aattagaaga ctgggaaatg catgaggcac agtgatgcaa ttgagcagcc 2100  
cagccagctg gaggctagag tttgagttta gaaggagaga agagtggaaa aatggtatgg 2160  
gtccagactc caacagccct caaagagtga ttataatttt tacaaggaat actaattctt 2220  
attaatccgt tacattgccc catctgcaga gatctagaca tccttattct tagttctgta 2280  
ttaaaggaaa acaaaaacaa ttatttttaa atgataact ataataccag aaactcttta 2340  
gataacaact gtgataccta ttgacaacaa acttttaata agtatacatt tcatgggatt 2400  
tagtggctag gttagaaaaa aagtcaaaat attttgaagt aggcttttgg ttttctgat 2460  
acacttctaa aaactgagct ctgatttatt ataattcaac cattgctcat gataatacat 2520  
aacaagtac acaatcttta taaagataac gtatgaattt aaagaactaa gaaaatagct 2580  
gtttctaaag atctccaatt ttccaactga tttctgagca aatattctcc taagaaattc 2640  
tatttcctaa aaa 2653

<210> 158

<211> 1909

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23103

<400> 158

cacttgttct ttagaaaaag ggagaaatct ctactcaagt tttagaagaa gataaaatat 60  
gggtaagggtg acagttgtta ctgccatgca ggaagaaaaat attggggctt gatagataag 120  
caaataaaca agataccttt gtgataaagg tctccacttt tagcactctt cttagccagt 180  
atgacctca ataattcctt taccatctcc aaagcttcag gtacttcagc tctcaaaagg 240  
aaagtgactg gataggttgc acctaaaaca ctttgggaa aattaagtg gatttcctca 300  
aatataaccg tatagcctcc taaaataaga ctatgctgtt aaacctcttc ttttagattc 360  
tttacttacc caaccatta ttaattagt cctcatctat ccagacggc ttttgcgttt 420  
gtttgattgt aagccttcaa agtgtcagg attataatac ccatttgttt taattggta 480  
aagtgataaa catagtgcct gtgcatgtac acattgaagg tatggctgtt tgacagaaat 540  
aatcttctta ctttctctt cccagcccta acttctgaag ggtgagagaa tgagtgtta 600  
aaaaaatitt cttttcagcc caatgttatc ttttagcagt cttacatct tcatcacctt 660  
tatgcatggt aatcagcaga acaggtctcc ctactgcagc agaactctgc atgaaccag 720  
taatttctca aatctgatag gtacagaaaa gtgtgtggcc tttcacttcc tgtcccttcc 780  
tccaacccca aaccatagag aagcatgctt tctggtgaca tttattcac atagacattc 840  
tcacagctct ttattctgta agaaagatta tgtggagtat gaggagtgtt gttccgtgtc 900  
atttataac tgcctactcg tttgattttg caaatttga aataaattat gaacgtcag 960  
gaaaatcctt ctatgagaga gttattactt ctgtccagtt ttgaaagtca ggtttgcagc 1020

tatctgtgct atattcatttt aggaagggtgc ctgatgtgat cttcacacgt atcacctagg 1080  
 attattcagg aaaggataat tcagattgtg gagctacaat atggagtttc cagtggttca 1140  
 gtatgagtgc agtgagcaag acaataggga ccagaatggg gaaggccact taaaaatcca 1200  
 agttcatggc tggccacagt gggtcacaag gtcaggagtt tgagaccagc ctggccaaca 1260  
 cgctgaaacc ccatctctaa taaaaatata taaattagct aggcgtgggtg gtgggcacct 1320  
 gtaatgccag ctactcggga ggctgaggca ggagaatcgc ctgaaccag gaggcagaag 1380  
 ttgcagttag ccgagatcgt gccactgcac tctagcctgg gcgacagagc aagactctgt 1440  
 ctcaaaaaaa gaaaaaaatc caagttcgtt actgactttt atigtactcc acgagataaa 1500  
 aaacatagag attcatcagt ttagctctac ttgctcaata aaccacaact ttaactcttt 1560  
 atatatattt ttctgttgac agaatacaaa ctggtgactt ccaaaattat gggtagctta 1620  
 ctctgaggt ttagtcaaga gttgtacag ctctaaatcc ttggatagaa ggttttaata 1680  
 aaaatgccaa cttttaatta aaaatctctc tcttgattca gttatcttgc ccaaacttgg 1740  
 aaactcttct tactactgta tataataatt cctgttaacc agatgttgtt tgatagctca 1800  
 gtaataacaa atggagggtta ctgtcctaa cctgatttac attctttcct ttgatgtgt 1860  
 agcatatgtg gagcagtcag ctaaataaag gtcttatcaa taagaaaaa 1909

<210> 159

<211> 1989

<212> DNA

<213> Homo sapiens

<220>

<223> nb1a23234

<400> 159

aatttgatgc tggggacatt acctgacttt gtatattgca tttgatctg catcatgttt 60  
 gagaaatata tgcaaatgac tctaaggag aggactttga aggattctat cgaacaaata 120  
 tgtacatatg tttagtccg tgctgggcag aggagtgtgg gaatgtacca gcgtgtatat 180  
 aagacagtgt gcatcttacc taataatctt tatggccaga ttgagaataa atttttcgaa 240  
 attttctttc ttccgcattt ccaactgacc cttattttaa agtcattaat gttgagctct 300  
 ctcatggtat ctttatccat ttttctaaag ctgcggtttc tcaggttatc aagtttataa 360  
 cccttgtgag caagtcacgg atggtggagg aagcatgatg gagtatctgc atgagacggg 420  
 gggctgagtg tgggaaactt gtgggatctt ctcatcctcc ctttctcaga gcaccagag 480  
 tttgacagcg ctttgtgagt gtttatcaag agcctccaa aagaggccgt ggggcgattt 540  
 gcgaagtgca caaggcaaaa agtcaatagc ctgttttctt gtgctggctg ggcttcttgc 600  
 cattaattag ttgtgtgatt tggggctagt cctttaaccc atctgcactt ccatctctgt 660  
 gtgtgtaaaa tgagggtgatt gtaccaggcg atctctaaac acccttcttg cctgatgtt 720  
 ccagaaagcc tggttcggga gagagagaga cagacacaga aaggcgtgtg gccaatctc 780  
 tgctctcaag tatttcaacc ataggagcga ttaatatcca ctacacagat tcaaaatcgg 840  
 ggctactcca gggctggggg gccctcctgt ccgtttcttt tctcctctaa taaactcaaa 900  
 ttgcctacaa cttttctttt tattattatt attatacttt aagtcttagg gtacatgtgc 960  
 acaatgtgca gatttcttac atatgtatac atgtgccatg ttggtgtgct gacatgcaca 1020  
 catatgttta ttgcggcact attcacaata gcaaagactt ggaaccatcc caaatgtcta 1080  
 tcaatgccta caacttttca acatgatttt attcttctca gcattgcctt ccacacaatg 1140

ctcttttcta tataacttct tctgtgagg ttctgtaata ttgtctctgt gcctttcttt 1200  
 tctcacattc attatctttc aggtagaac acccaagagt gtttccactt gaactttcct 1260  
 ctttctcagg acagcctctt tgccaaaccc atcttgacgc atgtactctc ttccttgagc 1320  
 gtatgtgctt gcaaactg tgatggtag aatcatatgt tgccacattg aagacatata 1380  
 agatgcctcc agtttctatg ttcaccattg tgatcattga tcacatatat gtgcccagtt 1440  
 acatactgta ctgaaccaac catcctatgc cagacgttta caaacaacac attcagaaaa 1500  
 cagatggggc atagaggatg ataataaggc agagtggatg gcaggaatca gcagagtga 1560  
 taatagggat gtagactaga ccaaaggaga aaaaaatcc tgggagtttt ggttgcaat 1620  
 ttggaatgaa gagaatctat tcttttttct tgtttattgg gctttaggac tgtgtaaca 1680  
 aatttaggct ggctaggcca ggcatagtgg ctacacagctg tactcccagc aagcactttg 1740  
 ggaggtctag gcaggcgga cacttgaggt cgggagtttg aaaccaccct ggccaacatg 1800  
 gtgaaactcc atctctacta aaaataaaaa aattagctga gcaccgtggc acatccctgt 1860  
 aatcccagct actcaggagg ctgaggaaag agactcactt gaaccggga ggcgaggtt 1920  
 gcagttagct gagatcattc cactgcactc cagcctgggt gacagagcaa gactctgtct 1980  
 caggaaaaa 1989

<210> 160

<211> 1715

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23300

<400> 160

aaatatgtaa caatacgttc tgggaattaa atgtgatgtt ttaaaaaag caaaccaca 60  
 ctgcattagc ccagtccaa gcacataagt gtttaataaa gagtaatgat attattaaca 120  
 cacttgaaat gtatcacccc ttcagttaat agaattgtaa acatgttagg atgcctgcct 180  
 agaggattta gcagaaaatg ctttgtaaat gttctatata tgaaagtaca tgttgatgtc 240  
 caggttagca agatgaacaa agatgcgcag atgagagcag cgattaacca aaagttgata 300  
 gaaactggag aaagagaacg gtaagtaata gatttgttta ataaattaca tttcaccgcc 360  
 tttaatagtt agcttgtaag aatctaaaca agaatgaaa catgtcactg gaaagaatta 420  
 caattgagat tataaaagtt tctattccga acatctggaa aaaataattt aggtttgtta 480  
 agtattgcag gacttggagg gaagtgggtg ttagaaga tgagcaagat atggctctta 540  
 aagagtaatt tgatggagaa gaaaaagtag atacctgaat tacaactgga gacataatgt 600  
 tacctgggtt ttaacaggga gacaatgttg tggaaccagc ttcatttacc aagctctcaa 660  
 ccttgagca gcaagtgtg tttccactct ctaaaacatt ctctctctc ttccttttta 720  
 gctaattcta gctcaactat caggctaat ttatatattg tctcttcaag gaatgtttt 780  
 aagtcacaaa taccttggtc catcatagca tttaatcaac atgtgttct aacaatctac 840  
 ttggctagtt tgcctctcc agtataatct aagtcttta acacaaaaa caacattgta 900  
 taccagcat ctaatgcttt gtttggttca taattggcca cgtaaatatt tgcagaatca 960  
 acaggttag aagtacaaag aaggggctga ggaatcaaga aaggctcca gaggcagggt 1020  
 tataaagtga gtaagacaaa tatgtataag gaagaggcaa atatgtataa ggaagaggg 1080  
 gaatctttca actcaacccg ggcattcagg tgatcatgta agatctcaca caataagaaa 1140  
 aagaggtgca tctgtgtctg actttatttt tggatgatgg gagtcattta aagttttaag 1200

aaaggaaatg actagatcac atttacactt taggaatcctt actctgttgg tgtggagctt 1260  
 ggacttgaag gggacaagat agatggcaga aaaatgaggt agaagattat atagggttga 1320  
 aaatggaaaa ctccaaaaat tggaaggaga ccttagaatt ttaataaaat gtagaaacag 1380  
 caaccctcaa aatgaggaag gaggcacga taactgcctt gggtagcttt agaggatagt 1440  
 actgctggta aggagtacgg attgtatgtt gttttttttt ttgttgtttg tttttgattc 1500  
 atgcagcttc aagtactga gtttctatca tatgccatgc cctgttaagg ttttggaggt 1560  
 aacagtagta gacaaaaatg gagactttgt ttccacagag ctgtcattct aatgggagga 1620  
 gacagataaa actgtgtaat aatgtcagat ggtgatgagc actagaggaa caataaagca 1680  
 gaaaataaag aggtgtaata ttttagatag aaaaa 1715

<210> 161

<211> 2585

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23369

<400> 161

atacaaatat tccagcccca aatgagaaat caaacatatt aaaattgttc aagaaaattt 60  
 ctttgaacac ttttgaaggt ttttggaaac ttagaaaaga gggaaaaaaa tccagtgtta 120  
 ctagtaattt ccatggtaat acagataaaa tacattcttt taattctggg aaattagaaa 180  
 aagtggggtg atctttccag gaaaaacatg tgtaacatct gcttatcact ccagctccct 240  
 cctcctcctc ctctccacgt tcccttgagt aaatgtctgg gaaagcatga agcttgatgc 300  
 aagaacctg ttgtactggc gttttcctcc cctgtgaaaa cgtaactact gttgggagtg 360  
 aattgaggat gtagaaaggt ggtggaacca aattgtggtc aatggaaata ggagaatatg 420  
 gttctcactc ttgagaaaaa aacctaaagt tagcccaggt agttgcctgt aacttcagtt 480  
 tttctgcctg ggtttgatat agtttagggt tggggttaga ttaagatcta aattacatca 540  
 ggacaaagag acagactatt aactccacag ttaattaagg acgtatgttc catgtttatt 600  
 tgttaaagca gtgtgaatag ccttcaagca tgtgaataat ctccatctt ccccgccaca 660  
 catacacaca cacacttttt gtttctttca gtagacacc ttttaaaatg caaaactaac 720  
 tgaggcattt cagtaacttt gctttcaaat caataaagtc aaatgtatgg aaacattttg 780  
 tgcctactc tccatacccc gtgtactcaa attctctact gtatgaatta tgctttaagt 840  
 agaattcagt gccaaaggaga acttggtgaa ataaattatt ttaatttttt ttttatcctt 900  
 tacaagcca tggattttat ttggttgatg tgtgctctgt acacaagcca tttcaatagg 960  
 atggagctgt taattatttt ccaaagagta atagacatgc aaaagtttca ataaaaactg 1020  
 ggccattaac aaataaatta ataaactaat aagcattccc ttctagggtt ttgccaaact 1080  
 gcctatccaa taacaaattt gagaatcgtt gaaaaagcta gttatatttc agagaaatga 1140  
 ttttcattat tgaaactgtt ctccctagca ggccattttc cttttttcct gggagttag 1200  
 caagtttagg agagaatagt catgaaaaga aagggaagaa aggggagaag ggaagagggt 1260  
 aaaaagtaag tgctcagacc tatgaacgta atcccttgc tagaaatatt taagagcagc 1320  
 tcagcttggg tgaaactgag ttttgtcatc ttccatattt gcaggaaggt attttctgac 1380  
 ttgcaatgca gctagatgta aaattttatt ttatcatact agaaagcctt gactagaaaa 1440  
 atgaataaat attgagggtt tcctgtccat atctggcttg catgtgccag aaagcagaga 1500  
 atagaaaatg taatctccaa catccaagca tcgaaacca aggggtaggc aattctatgt 1560



aggttttga catgaagttt ggtgcatctt ggtttatgct ggctcaactg ctattaaacc 1620  
 tctctggctt atagtctctt cattctatta gacaagcacg tatcgaacac ttgcttcgca 1680  
 caaggctctt tagttaacaa tttagcagct actgttttgt ttaaacacac ttttcaccaa 1740  
 ataggttctg aggcaaacga gagcaatgac tatttaaaga aaggctttcc cagcatcact 1800  
 tacacatccc aaaactaaaa agatcaactc ttccaactga gaaaagactc ctggctttga 1860  
 atggaaactt acagcagaga gtcacaggcc acggcaacaa caacgacaac aacaaacatt 1920  
 tggaatatta ttctcaactc acgttttaaat aatacatctt attatttttc tagtagagaa 1980  
 actacaaatc agcctcttca acatttatat acagttaaat aagcctcttg caagttaactt 2040  
 gttctctcac ctgaggtatt tttttcctcc ccaccttgcc cctgttcctc ccttcctctt 2100  
 ctccccttgc aagaggaaat atttaacata tttgggtcca acttcaataa tgtaataatt 2160  
 aatacattaa aagcatttaa cttcctttct agaaaaatgc acaggctaag gcatagacaa 2220  
 aacaaagaga aatgctgaga aatttgccac tggagacaag caatctgaat aaatatattgc 2280  
 caaaagtctt ttttatgtca tatagtgtca ggatttgaag gagctatitt tttttaatgt 2340  
 tgcaactagc aactcatctt cggaagacac agccaggaga atgaagtaga agtgaaaggt 2400  
 ttataaatcc atttgaagc atttatccca tatattttta attcaagaaa aattgtgttt 2460  
 atcttttagaa ttttgtattc aatactttat gtactatgtg actcatgctt ctggataaat 2520  
 aaagcaccaa atatgtatct gtaaccacaa tcacacatat tatattaaat atatatctat 2580  
 aaaaa 2585

<210> 162

<211> 2027

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23436

<400> 162

gacgctacgg cggatatggc tgcagagcgg ccggctggga tcttagatag gaggggtgga 60  
 tttgcaaggc ctagaatagc tggggagtgg tttccccgcg gaatcggcct ccctgccgct 120  
 cctgctttgt actgtgacgc tcagcctgtg atgactgggtg tggaatccgc tgagccacct 180  
 tggcctaagg agactttacc actctgagat tgtaaactctg taaaatagag atgtaggatt 240  
 agcccatagc gtagttgtgg taaatactgt gagacaataa ggggcctggg acacagcatt 300  
 caaatgggaa taatgaaggt caagactgtg attcctgtat ctttgacgct ctcggtataa 360  
 gcaccgtcgt gggcacaggg cagtggcctt tatgcaggag tttaagaggg aatgaaggaa 420  
 tgaatgggca aactctggag ttccaagta ttctctccag gagctgtttc cattcttttc 480  
 gtttccagca ggttggtaaa ttcattaatt tattcattga tctaattaaa atatactaag 540  
 tgcccctcac ctgtgctagg ccaatgtgat acaatgagca gaacagtcac gggccctccc 600  
 tgggaagccc tctactagccc aaggactcct ttagacatt taagtgtcca caggctctgg 660  
 agttccaacc ttgagtcaa tttagcagct gtggaccttg ggcaagtcac tacatctaag 720  
 cctgtttttct cttctgcaaa atgggttaagg attcaataag ataaaactgt aggcaatgaa 780  
 aaccgtacct ggtaacagta ggtgctgaag aagtgttagc tattaatttt tgcttaattt 840  
 ttctctctct gctctatgtg atgaaaagat tcaaggagca attgttgga tgtaaaaaga 900  
 gcacgggact tggagtcaaa tacttaagtc taccatcaag tagttgttaa gaattaaaca 960  
 acaatttttg tgtaccagat taaatgtggg ctgcttagga atgatgactg tgtcttaattg 1020

atctctgtat tcttagtgac atgtagaatc attgtgcctg acacatagta tgtactcagg 1080  
 aaagaaatgg aaaatgtggt tttagcattg aaggccggga gagagggtct aacagactac 1140  
 aagccctgcc aggagcagag taagggaac agaggagaaa agtggtttta gtctgtgcct 1200  
 gaatgtatit acatctgttt gtagcccaaa agccaaaagc gtacatacgc ttggcttttc 1260  
 tgtagctatg tttatggctt tacagcagat tttatggagc tgcaattact ttgatcatga 1320  
 gggactgatg ctagtggatt tacttcacca aatggaactc actttgtggc ttctgaagaa 1380  
 gggacctttg tggactgtca tggagtagtt aagagtgcag gctctgattt agtgatcaga 1440  
 gtctgcattg tcaggaatgg gacaaagtga agttatgtgg cacttgatag gatgccctga 1500  
 gaagattgca acatcacccc tgtgatattc ctgctgaaga tccataacct ggatgtaatc 1560  
 atgaggatat atcagacaaa cccacgtaaa gagacatgct gtatacaaaa ctgtaatctt 1620  
 agaaagtgcc aaggtcatga aaatcaaaga tagaccctgg aactgttcca aactggaggg 1680  
 gaccaaagag gcatgacaac taaacacaac acatgattct gaactggatc tttttgcttg 1740  
 aaaggaagtt acagggacag ttggaaaagt ttaaattggg cctacaatgc cgtggtaatg 1800  
 atgtgtccgt gtaattttcc tgattttcat ggttgcctgt taagttacat cagaggatgt 1860  
 tcttgtttgc tggaaagtaa atcaatgtat ttggcagggg ataaggcatc aaatggtcac 1920  
 cttatttca aattattaca gggaaaatgt ttctctctgt acttaataac tttttgcaa 1980  
 tttcttaaaa tgaaagctct ggagtaaaaa cttaaggat ccaaaaa 2027

<210> 163

<211> 2400

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23511

<400> 163

tttcttggt aactccatcc agatgaatta ttcagtattt tttctcctat cttaatgaag 60  
 ttaatttgaa tgctaatttc ctataaccaa gaaaacagtt gaattaaata acccttatct 120  
 tttaaactta aagcttatac tactaataat catttaacat tcacttcctt tttctgact 180  
 taattggtag gtaaataaaa tacttcaaat ttgattggca aattggaaaa tcacttagaa 240  
 caatctgcta gtatttttta ttcctttgt tttttcctt acacatttgt actgcaaaat 300  
 aaatcaagga caaagactca cactgaattg atcaacttgt gtttggctct catgggaatt 360  
 acatcttttt tcccctcaac atttattaaa ggaacataca gaatttcaga ctatagcaaa 420  
 ctaatacctt tagcttgact aagagttgat tttcgtaag gaacagaact tgtaatttat 480  
 ttcgacatac tttaatgtat gactcatccc tgtaaagtt gtgagactca aaactacgcc 540  
 caaatcactt aattttatgt ccttcctgt ttactgtgtc tgaccttcaa gatttcgtga 600  
 ctgatgctga aatggaagcc aaccactgca gaaatttggg gaaaatgag atctgaagaa 660  
 tacaagggga agtaggaatt catttctagc atttccaaac ctgcttaatc gtgtctgtc 720  
 caccacagtc agaggaaaag actgagttca tggaaattac cagctaagcc ttacatctgt 780  
 ctttaattgt ttaggaagt atactgaaaa ggtaagttag atgtctgttt tgaagaaaga 840  
 ctcttactgg gtacctttaa acccgttgtt tcctattagt aaagatgggc agcttcttta 900  
 ttcctagctt caaaaagcct tgcccctgtt tgggtgttt ctctgtattg tggagaaggt 960  
 agtttctgag caaggtgggt cttttcctct gcttctcagc agctaagaca gaaattgcac 1020  
 cgaagtgtac aaagggccaa ttttgttgt cctgttgtgc tcaaatcctt ttttttaaaa 1080

aagttatttc aatcaagtct tagtttttatt cctcactata taggaaaaaa atctttaatg 1140  
 cctcaaaagt tccattcagc attacatttg cattactctt atttgcagca aatatgagta 1200  
 aaattatagg tttttaaagg tctctaataa catccactta tattggtttt gtagataatc 1260  
 cataaattac cagaaataaa ttattccaca ttattacac acccatgtaa tagatgtcgt 1320  
 gccaggccct ggaatatact aatggcatca cctcatgtgg taaaaagaca cattccgcca 1380  
 tccctggagta tacaaggta gactagcata tagttcatgt gctcaaggag ttcattttta 1440  
 ttgacatgat acagatagaa ttgtagtta gggaatcaaa atctaataaa atgaggctaa 1500  
 ttccattttc ccattaacac taataactag tgtgtaaatc tgaatatgac acattctata 1560  
 tgaaagaagc tctgtgtgca tctacactaa atactcgtgt gtgccaggta ctgttttaaa 1620  
 ctacgtatat ttttttaatt ctcataactg ttctctgagg tatgtactaa tactaaagct 1680  
 tattgttaaa ggaaggcaga aaaattaagt aacttggcct aagtttgcct aactgtgatc 1740  
 tgggatcaat atttgaaccc atacaggctg attgcagagc ctgcactctt aatttgagtg 1800  
 tgatatttat gtgcagtacc tggctataag taccacaaaa acgtttcaaa ttctttataa 1860  
 aatttgctta gttaaaaaag taccaattgc ataatatggt tataagtctg gtagaagtta 1920  
 ggctttttac aagacatgct gcttactgca ccaaggaggc aagaaggctt ttagagagc 1980  
 ccagaatttc ctttctcaa ctctgcttc caagacagtc attttgcagc ataaccgttt 2040  
 ccccaaaaaa cacagacaca aaatttaaag aactggaaca gaggaagcag agcttatcat 2100  
 agtatatatg tttagtacc tgtcacttag gtccaccct ctttcttgt ggattgtgga 2160  
 cattttgttt aactgctaaa tcatgagaat atatgactgc tgagactttt ccaaggattt 2220  
 tttaaaaaac acattaggct ttgtgcagaa gtaaagaaaa agtgctgtga gaacccagg 2280  
 taggtaattt actttctatt gtactcatag ttgtttgaa acctcttcac ctctatccct 2340  
 tattgtttta tactctgtaa atctgatttt acctttaata aacttttctg aagtgaaaaa 2400

<210> 164

<211> 2954

<212> DNA

<213> Homo sapiens

<220>

<223> nbla23664

<400> 164

cattaattta atagacttta tattaagcag aataaattgt aatattgctt atgactaaact 60  
 tcaaactctaa tattttaatt tcaactaatc atttaactac tgacatcaag aaattactaa 120  
 agctgttgag atttctatct catgtcttga tgttctctca gaatgtttat tggctctcatg 180  
 acttttgggtg actttcattt ctctgtctgt cccattttct tcataaaagc tcatgtaaat 240  
 acctaatatt taacttttaa tticagtaat ggcaatcact gtttattttc tctgtcagca 300  
 caatacaaga agctgattta cagctgttta aggaaataca aatgagtgga agaaaaggaa 360  
 agctttttct gggaattaaa gagtaaatca ggttttgttt tattttgctt tgttttaaga 420  
 gttctataca atataaatag aaaatgggtg agtcccata gtcacttggt tggctctaaa 480  
 tcttatccat tctattatta ctctgagaa agctttgtag ttgtcatggt actcatgttt 540  
 taatgactga gaagagtttt ttcatggta cttttaaaaa atttaataaa atacaaattg 600  
 atttttgtgt ttggtaaact atgttttcta ggggtgtgtt tttaaatgta gtttaatttt 660  
 taactctggt ttaatttgta ttctcaacca ctagtttagca gaaaataaaa tatctgtaag 720

tcagataata aaaaacttaa atgaactgta aaaacctgaa gttatgaaga aagagtgacc 780  
 taatataggt actagtttgt ttgttttttc attcattcat tctggccac tgtgttcagt 840  
 cttgtacttg aataaaaatg tcagaaacac cacacttttt tctttagttt ttcattgcttt 900  
 tttgtctttt cccctcccc agcaaactg ttattgtgtg tcagcatttt ctgcaaactt 960  
 cttttttct actagcattt aaatatttcc tgtgtcctag ggattgctct gtggattgca 1020  
 ggataaaaga gggaaggac cctagtgcc ctccaggagg ctgtgtatct ttagtggag 1080  
 gagtccaatc actgaacaga tacttacatt tagaatgatg agtgctctgg tgaagggtta 1140  
 cagagtacta caggacacca gcgtgaagat taaagggaaa gtgtttcaga ctagaatact 1200  
 ccctgtcttt tctgtataa aatagaaaac attttgctaa cattagtagg attatagtta 1260  
 cttttcgtat cgttctcttc gaacctgcct aacattgcag agcaagtagg gtgagtggga 1320  
 aagatttttc aggttctcat attgactatt ttgcttttca tttttattcc tttctctaa 1380  
 caacaaaata aaggaattca gacaaactg tcatgtgata attatatagc cttgggtaat 1440  
 acattattat ttttagttt taaagtactt taaaaattgg cagagtattt ttagtatact 1500  
 aagatttgaa cagttaacc agtaggtcg ggatttgatt acgctgataa agatatgcaa 1560  
 gaaataaagt aataaaagac aaaaatgtagg ttgggaaaat tcaaattgta gttttatcca 1620  
 ttaatcatat actttacttt gtgctgtca ttgtgataat tacataaaga taaataaaat 1680  
 aacacaccta gcccttaaag tagtagttct ttacttttta aaggtcaggg gtcccttgag 1740  
 aatctgaaaa attgagaatc tcttctaag aaagtgcaca tacacataaa attttaggga 1800  
 atattctagt tgtcttttca tcttgaaac cccaattaaa aattcatgtc ttaaagaact 1860  
 gagatgatga tcatgctata tgagctagtt aattattaat gctgatgtgg atattcggtt 1920  
 aaataaagcg aaattttaga aatcagaagt taaatttata gaaggaaaa gtatattttc 1980  
 tgttgtagg aaagcatttt ccagtaattt gatttttctg gcaccctaac taagggaagt 2040  
 tggctttttt aaattttact ttgttgcaag agattaaatt taagggttag ttccactttg 2100  
 tttgcaatag ttgaaaaag aatagttaat gcagattttt tttttaaatt ttttctttt 2160  
 taagctttgt gtctgtaca atgtgagttt gccaaatttt ctcatctgc tacagattag 2220  
 gtatgccatt gttgtgccca tgtggcggcg caccctgtgc ttcttaaag cactgactgg 2280  
 aggtttatcg catcacttgt tcacatgcac ggagcctggt aacagcctca tctgtatctt 2340  
 gttagcttca ttttcttatt tttaaaattt cattatttat aaactcaaca tagcatttaa 2400  
 aaataaaggc tagttttaat taattaatgt tactacaaaa agtcattgct aaaattttca 2460  
 tagtgaaaca gattttaact ttgttataaa tgtgctatgc ttttaattaaa ttgtatttac 2520  
 tctacaagca gggatgtttt acctgccatt ttaactgtat ttgccaatt cttaaataa 2580  
 tttgaaaat tgaaattgaa gcttatgttt atgtggcaaa agtaagcttc aggactgggc 2640  
 tgtgtatttt tattggcatg taacagttaa tatgagctct acaagaattt gtttttaagg 2700  
 agctaaagct atcaacagct gcagatttaa aaaattatat attaaaactg ttaggttagc 2760  
 tcagttgtac aacttagtga atcttgatc ctgagtttct gaaggctggt ggataggtat 2820  
 ctctgaaatc attgtgtttt agtcttttta ctgatagttt tgtataggga attcatcttc 2880  
 tcttttaaaa taactttttt cctttaattt atttctatta cttattgtac ataaatttta 2940  
 aaataaaaaa aaaa 2954

<210> 165

<211> 1996

<212> DNA

<213> Homo sapiens

<220>

&lt;223&gt; nbla23860

&lt;400&gt; 165

tatcaaaaag attttatctg tcccaaactt tctaactgta gccccagcac caacctcttc 60  
tttacatttg caccattacc tctctttgaa tactgtcctt ttttaacttg attctgttta 120  
tgatgatgcc aaccaataaa ttcaattagg aatataatga tgagcaaagc agacattgac 180  
tctgtcctca gtctggggga gaaaatgaga cattaattga ataatacacac aaataaatat 240  
aaatctgtta ctgtgtcaag ctctgtgaaa aaaaaagggg ggactgtgat gctctgagta 300  
cctataatag ggcatctgac tttgtcgggg tggtcaggga ggtcatggaa ggctcttacc 360  
tgaatgacca atagaccttg actaggcaaa gaaaagggtca ttatcaatgg ctgcacaatg 420  
attacaaatc tgtctgagtg tatgactgag cagagcacag atgagaacaa catgaactca 480  
gtagtgcttt ccatttagaa atttataata aggaggctga ctcatgggtg actcactgtc 540  
tcctcctaag aggctgcctg atggggtcct ccacttgctt atcagagctc tgtggctctg 600  
acatagacat gattttctaa atcccatggc tgaccagttc tgcgtttcct tcggttttat 660  
gtttatgtgt ttgtttgcct atttatctac ctgtgtgcca gaattatgag atcgttcatt 720  
gccactgctg catctttcct tctcctctac cggttcctcc cttggcccct tttattttct 780  
gtattttctc cttttcccct cccttctcta cagaaacttt ctctcctcc tttctcttag 840  
tcttaatttg ccattcatit tctttttttt ctcttttat ctgtctttt tttctctgc 900  
tgttcaccat gaagatacca ggcttatgtt tgcatagtgc aatataattt acaaaggcat 960  
ctcagggaca ttattccatt tgatcctaag agcagcttg taagggtggtt gggtaagagt 1020  
catttatcct gtctacagat atgacagagg accagtgaact tcccaaggt catgtgtctg 1080  
ggaagggaag gattcttgac tgcaacctag atggctgtct cctgcactac tagaccatcc 1140  
tgccttaaca gaaatgtcac atacattcca atcacgtctt ttagtctgac tgacaaaagt 1200  
ccttttccgt ctgtgtctta tctttcatga aaataagtct agacaaaagt cgtggtcaga 1260  
ggggttttct ggtggctcat ccatcacatg agtagaaaca gccttagtct tatctgatga 1320  
atatttgagg gacaataaat ttgaccttg attgaactgc ttataaataa tgattttcat 1380  
tctgttggtta ccttgcttg ctgtgacctg gaagggtgga tggctaaca gaacaaaaa 1440  
caaaggagat tgcctcaggt atcatttgc agccttcatt atattactca tcttgagaca 1500  
tctatcttta tatatccaaa tgaaatctgg ttttttttc tgcataat tcaatccctc 1560  
agagactctt aaattccatc aggatctctg tttacttct tcttctgacc aattataaga 1620  
gagtttaaag aaagagcacg tctgtatcct atgccacaga ccagatgccc ctttattgcc 1680  
agggaacag ccagcgatgt ttatccttta ttaactctct ctgctgactt tcagtgtggt 1740  
taaagtgtta ttccaccgaa gtatgctttt aagatgtcag tcagcaacct ttattgacca 1800  
atggatcaca ttgggtaaag gctcctgctt attacataga gaattagact gctcaaagag 1860  
gattttgcag gggacaggca ccatttattc attcagtcatt tgatttgatt gattaacttc 1920  
ttatgcattt gttcaactaa gcatttactg aatgtctagt atgtgccaag cactctggtg 1980  
agatatttga gaaaaa 1996

&lt;210&gt; 166

&lt;211&gt; 1481

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla23877

&lt;400&gt; 166

gttcaagagg aaatcttggt ttacttcttt atgaaggact ccagcctggt ggagatgaat 60  
gagtcctgaa gatggaatcg aagctgtttg ggcacaaaaca aggtttcact cttgttgccc 120  
aggctggagt gcaatgggtg gatctaggct cactgcaacc tccacctccc gggttcaagt 180  
gattctcctg tctcaggctc ccaagtaggt gggattacag tactttaatc agcatttaat 240  
gaccagtcg aaaattcatt gtttgacccc aagcactggt gggaaaggca ggaggggagg 300  
cctgccttcc ttctccctc ccgagcccta cagcaggcca tggagtgggt agcgagttcg 360  
tacagtgcc accacattcc cagaaacttc cagcagaggt taatcctgct cctctcaggt 420  
gggcttgccc cattctctag actttggaag gtaatgttct atagaggcct gttctgaagc 480  
tttaccaggt caaaccggag aagaacccaa caagtaactc atcccagcct aactattctt 540  
caagggcaat caacctacag catccaagca cagagaaatc aaatccatgg agaattctca 600  
aattaggctc agaattcatt tgggtcaatg aatttactgt tattaagatc ttagttgtgt 660  
tcaaccatga ttgacatac cttagagtga gaagatattc ttcttggcct cagactagtt 720  
gaaggtagag agagagacag gcccttgggt gtggggagac ctctcctggg ataatacaca 780  
caaaaaacca agagctgctc actgtggtgc aggagacagc agggcctgaa gccagaggct 840  
ctgtgtcctt gaatacaatg ttttactcct ctgacccctg ttactgtgat ttggagaggc 900  
agacaatata ggatgggctt tgcaggcagg gaggtccagt tataatcca gctcttacta 960  
agttgggtaa gactactct gagacttagt ttcttctgtc atctctcaat agaatacata 1020  
aggtaacttc ctcttagtgt tgttttaaaa ttcagtaaaa taatgcaggc ttagcacagg 1080  
gtctgatgta aattttcaat gaattatcgt tgtcaatatt gttctggaaa acaagagggc 1140  
atattagaag atcaaaagta ctgccaagca ttgaagtgcc aattctagat ccagtctcag 1200  
ccctctgaga atggatatca ttgttttcaa gccattcaga aaccaatgtg aattgaacac 1260  
ctagtatgag ctctctgagg gaagagccaa gtcattgcatt ttttatctta aggggtcttc 1320  
aatacctcta gcccaaaaca gtatctccat caggattctt ctctgatagt gttcatttct 1380  
ttttctcaa tggatgcctt aaaaaaaaaa tcctacaagg aaacctgtac tcctcaataa 1440  
caccactcag gtgaccatta aatcatttac attgttaaaa a 1481

&lt;210&gt; 167

&lt;211&gt; 2056

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;223&gt; nbla23998

&lt;400&gt; 167

ctttgtgtgt ttggcttatt tcaacttaaca taatgttctc caggttcac ccatgttattg 60  
caaatgacag gattgcattc ttttttatg gctgaataat ttgtgtatat atagcacatt 120  
ttctttattc atctattgat agatgcttaa gttgttttca tagcttggct atttgaata 180  
atgctgcaaa taaacatgca agtgcagata cctgtttgag atatgatttc attttcttg 240  
gatataacc cagtaatgag attgctgaat ctacaaaact ttttactgag ataataccta 300  
gactcattaa aagtacaaa ataaattatg tgcctaaagg aagttatctg tatcctgctg 360  
ttcatggtag ataataccg tatggccatt aaggtctctt ttataatttg agcaagcttc 420  
agacttcaaa gacttcacca agctacgact ttttgcttta atctccatag ttcagctata 480

ttcactctgg ctacaaaagt ttcatgttcc tatttacttt gacttttgtt ggatatgggc 540  
 ttctaaata ttttaaagaa aaatattggg actattcttt ggcaactgtaa ctctgaaaca 600  
 gctgctccct tagcacagaa ccatgcactt gtcagacaca tggatgaagac ttgcagagtg 660  
 aattgtaaag ccctgtattc tcgatcgggt aagcacttgg gcagcccctc ccattttgca 720  
 gacagagaac tagaaaatct aggaaatctg agacgtgcat gtgagaacca ggatcactcc 780  
 acaactgtgc tgttgacgca gctgtgatag aaccaggctc agctggttgc ctcatgagc 840  
 cacatctgtt ttctctgcct caccacctag cattgcattt cttcagcctg ttttcttgtt 900  
 cctcacaag gggatgtaat tgtcacatag gatactgttg ttcacaaagt ccatggagtg 960  
 gccatctgag ttaattaaag ctctgtggta gttgctgaaa gcatttctgc ctgaagtgt 1020  
 tctgtcctgt tgctttctcc tgcagggtgt ggttggcggg gttatgatag tgactcctaa 1080  
 caacatcatg ttgaccctc ataaatctga tcctctggtt attgaaaatg ggtgtgagga 1140  
 gtatggtctc atctgcccc tggaagaggt tgtttccatt gcgctctaca atgacatttc 1200  
 tcacatgaag atcaaagatg ccttgccatc gtaagacatt tatttgttta ccaggaaaaa 1260  
 aggggtgtg agagagctaa atgtagctta aaaatgaggg catttgcatg attgagggat 1320  
 tgtgtagagg tgattttgaa gatggaagac ttgtgcactg aagaaaatga gaaaaatgag 1380  
 aagaaatgaa aagaataaaa tcaatgatgg gaaaagtga acatataaag attaaaggag 1440  
 aaaaacaaag aagccgtcat gtaaaaatag tatttgttgg gcttattttt ctaaaaagca 1500  
 gtgcacgttc ttaatgaaat tatgaaggaa gaaaggcagt tctctgaaag aagtttatcc 1560  
 aattatcaat aagagaataa tgttttcttc tgggtttaat taaggagagt tatgtttgtc 1620  
 ttcatttaac ttctaggaaa agcagtcctc ctgattcatg tcctccctca gtctgcatg 1680  
 gagagagggt tgggtctaca gtgtagtgtt agccaccttc tcatgctgtg aagagggagt 1740  
 aataccagtt tgctttttcc ctgaaatata gatgaatata acttcagtcc tgattacttt 1800  
 tgccttataa tgctggattt attgtaaaa agagaggga gctcccagg aaaaaagaga 1860  
 aagcattaag aaagctcagg aaattgatta actgatacag ataactctgat tttactgtc 1920  
 ctttcgtct actgtgtctg tttctctata aaagccagca gtaaaaaact ttaaaaacct 1980  
 tcagtgtgg gaagaggcaa agcagtaggt cctaacagta aagagggaaa ctagcccttg 2040  
 gggttatat gaaaaa 2056

<210> 168

<211> 2564

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24043-1

<400> 168

atttcatgac tgggtcgctc ctaaactctg aaatcagcct tgcacaagta cttgagaata 60  
 aatgagcatt ttttaaaatg tgtgagcatg tgctttccca gatgctttat gaatgtcttt 120  
 tcacttatat caaaacctta cagctttgtt gcaacccctt cttcctgcgc cttatttttt 180  
 cctttcttct ccaattgaga aaactaggag aagcatagta tgcaggcaag tctcctcttg 240  
 ttagaagact aaacatacgt acccaccatg aatgtatgat acatgaaatt tggccttcaa 300  
 ttttaaatgc agttttatit tttttttct cctatgactg gagctttgtg ttctctttac 360  
 agttgagtca tggaatgtag gtgtctgctt cacatctttt agtaggtata gcttgtcaaa 420  
 gatggtgatc tggaacatga aaataattta ctaatgaaaa tatgtttaaa tttatactgt 480

gatttgacac ttgcatcatg tttagatagc ttaagaacaa tggaagtcac agtacttagt 540  
 ggatctataa ataagaaagt ccatagtttt gataaatatt ctctttaatt gagatgtaca 600  
 gagagtttct tgctgggtca ataggatagt atcattttgg tgaaaacat gtctctgaaa 660  
 ttgatgtttt agtttcagtg ttccctatcc ctcatctcc atctcctttt gaagctcttt 720  
 tgaatgttga attgttcata agctaaaatc caagaaattt cagctgacaa cttcgaaaat 780  
 tataatatgg tatattgcc tcctgggtg tggtgcaca cattttatca gggaaagttt 840  
 tttgatctag gatttattgc taactaactg aaaagagaag aaaaaatc tttattttat 900  
 gattataaaa tagctttttc ttcatataa cagatttttt aagtcattat tttgtgcaa 960  
 tcagttttct gaagtttccc ttacacaaaa ggatagcttt attttaaaat cttaaagttt 1020  
 ttttaatagt taaaaatgtt tcagaagaat tataaaactt taaaactgca agggatgttg 1080  
 gagtttagta ctactccctc aagattttaa aagctaaata ttttaagact gaacatttat 1140  
 gtttaattat accagtgtgt ttgtcatatt ttccatggat attgtttcat tacctttttc 1200  
 cattgaaaag ttacattaaa cttttcatac acttgaattg atgagctacc taatataaaa 1260  
 atgagaaaaac caatatgcat tttaaagttt taactttaga gttataaaag ttcatatata 1320  
 ccctagttaa agcacttaag aaaatatggc atgtttgact tttagttcct agagagtttt 1380  
 tgtttttgtt tttgtttttt tttgagacgg agtcttgcta tgtctcccag gctggagggc 1440  
 agtggcatga tctcggtca ctacaactc cacctcccgg gttcaagcaa ttctctgcc 1500  
 tcagcctcca gagtagctga gattacaggc gccaccacc acaccggca gatttttga 1560  
 ttttggttag agacgcggtt tcatcatgtt tggccaggct ggtctcgaa tcctgacctc 1620  
 aggtgatccg cctgccttgg cctcccaaag tgttgggatt acaggcatga gccactgcgc 1680  
 ctggccagct agagagtttt taaagcagag ctgagcacac actggatgag tttgaatgtg 1740  
 tttgtgtagt ttgttgtgaa attgttacat ttagcaggca gatccagaag cactagtga 1800  
 ctgtcatctt gttggggtt gcttaaatat aattgactgt ttagattcca tttcttaatt 1860  
 gattggccag tatgaaaaga tgccagtga agtaaccata gtatcaaaaa agttaaaaat 1920  
 tattcaaagc tatagtttat acatcaggta ctgccattta ctgtaaacca cctgcaagaa 1980  
 agtcaggaac aactaaattc acaagaactg tcctgctaag aagtgtatta aagatttcca 2040  
 ttttgtttta ctaattggga acatcttaat gtttaatat taaactattg gtatcatttt 2100  
 tctaattgat aatttgtatt actgggatca agtatgtaca gtggtgatgc tagtagaagt 2160  
 ttaagccttg gaaataccac tttcatattt tcagatgtca tggatttaat gagtaattta 2220  
 tgtttttaaa attcagaata gttaatctct gatctaaaac catcaatcta tgttttttac 2280  
 ggtaatcatg taaatatttc agtaataata actgtttgaa aaggctgctg caggtaaact 2340  
 ctatactagg atcttgcca aataatttac aattcacaga atattttatt taagggtgtg 2400  
 cttttttttt tgtccttaaa acttgatttt tcttaacttt attcatgatg ccaaagtaaa 2460  
 tgaggaaaaa aactcaaac cagttgagta tcattgcaga caaaactacc agtagtccat 2520  
 attgtttaat attaagttga ataaaataaa tttattttca aaaa 2564

<210> 169

<211> 1945

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24402

<400> 169



agaaacatgg atacgggtcaa cctattaggg ctgagccttg gaccacaagg cctaacacct 60  
 acaggtctaa ggagatccct ggaacaaaga cactacacac actctttcag gtacctttgt 120  
 tatgggcact tgaatgtgct tgcttcacag aggctgcacc accagtcacg aggatctcag 180  
 accagagctc caggaagttc tgctgttggt ctgataccaa gactaccttc agattctgga 240  
 aaggattttc acgggggttg ctatgaagga gacaggaaa gaccttagca tgacaagtaa 300  
 tatccaacaa actgcctttc tgcaaaggga ctcatgtaca tctgaatgct ttcaaaaata 360  
 aatgccccat cagacatagt gtctcaagcc tgtaatccca gcactttggg aggctgtcgt 420  
 ggttgatct cttgggcctg ggagttcgag accagcctgg gcaatgtggt gagaccccat 480  
 ctctacaaaa gacaacaaaa aaattagctg ggtgtgggtg cgagtgcctg tagtcccagc 540  
 agcttgggag gctgaggtag ggggatcact tcagcctggg aggttgaggc tgcagtaagt 600  
 cgtcactgct ccactgtact ccagcctagg tgacagagca agacttcac ttaaaaaact 660  
 aagccctata ttaggggtccc cttctcttc cttctttcta tgaatgatct gtattccttg 720  
 cattcctggc tttctaattt ccatgtttgt tctggggctg agaataatcc aatcatgct 780  
 cctgagccta tatattttta atgcttgctt aaaacttagt tctctgactt tacaggttga 840  
 gaatattgaa cctatataca aatcttcaca catttgcaa aggttcctag ccaatgtaac 900  
 ctagggaat aaactagata aactcctgaa gtcatttcaa acccactcaa atttatccca 960  
 cagacattcc aatttctaga aagctttact ctctcaccta gattctcttc cctccaaagc 1020  
 ttgctgtcct cctgcctata caattctgga tgggcttcaa atacttacca gtccagaatt 1080  
 ctttgctcct caaggtgta ccagctggc aacagataat tacggtagtt ctggagctgg 1140  
 ttggcatggc aactatcatg gaccagaca tgagacacac aaggaatccc actggcaagg 1200  
 cacaggaagt acttccgggt tcgacaatgc tgatccgcaa ttagaagaca ctgtaagct 1260  
 gtgttacact gcaagaaaag aagcagagcc aatgggtttg gtgacttctg tggaaagctc 1320  
 ctaagcagca gccataatga gccatgaaga gcagatctga agactcccaa ctactaccca 1380  
 aaatgtgatt tagtctatcc tgcccaaggc cactcttctc actggaaggc ccaagtaatt 1440  
 tccatagatg ttctctctgc ctacactgca gcatactgag gacctaaac ctcaacggac 1500  
 aacaaaaacc tatgaactca gcctttcagg ctaaaaatca gcaaccctaa taggggtttc 1560  
 tactactaaa cataaacatc aatcttcttt tgtcccagca acagaaccat agccattaac 1620  
 taaccaagg tctaccttc tcttccctat acacaacaaa aattctattt catgcaaaaa 1680  
 cattttggca gtttctcagt tctgaaatc tctggctact ttatccaggt tccccaccc 1740  
 ctcccaggcc tcttctcaac acagcaagtt ggtcttctc attgccacta tattaggtta 1800  
 cacaagaaa ctctcacct gggcttcatt gaaatcttca aggatatagc cagctcctgc 1860  
 tcgaagctgg gattctgtat actgcttggt gaaaggagga atttcaaaa attctatatt 1920  
 aaaaaaaaaa ccaagataat aaaaa 1945

<210> 170

<211> 1559

<212> DNA

<213> Homo sapiens

<220>

<223> nbla24821

<400> 170

atatttaatg taattactga tatatgtggt tgcattcctc ctcttttacc tcatttttac 60  
 tctttatitt acttgactat tgtttgtgca tgcattctgt tgtgtgtgtg tgtgtgtgtg 120

tgtgtgtgtg tgtacacatg tatttcccta aagtgattgg ctggtcaaaa ctgtacagta 180  
ccacataccc catccccaag gcccataatt tacccattta gcaactttat aagatgaaat 240  
ccttataactt catttatttc tccacgttct ctgtttttgc ctgtgcaggc cacaggtctt 300  
tcctttctgc cttctctgat acttccctcaa aacctgtgcc aatcatacct gtagctgtgg 360  
actttgctga gagagtctag tatttttagc acaagctgta atgagagtgt cattgacagg 420  
gtgttgcttc tctttcagta atccatacca ccagctgtgt gatttgcctg tcatctatct 480  
tcacccactc atatgaactc actctcttac tgtcctctct ctcctcccct ttgtctccat 540  
ttttgcgttt ttgtcttttag atctctgttc tcatttagat tttggttata ggaccttttc 600  
aaatgggtta cgtagggtgt atattctttg acacccatca tgacaaaact attaatacct 660  
ttctttctga aatgtgagtc atattttgcc tagctttctg actcatatca gagttctttt 720  
ctctccgaca tatagaagtt attctacagt tttctaagtt ctggttttgc aaatgagaat 780  
tcaacttact ttccattgta aactttacat ttctcattct ggaagagcat ttgattttca 840  
gtttatcctt gaaagtaaaa aatttgaaaa ggatacgtct tgttgtatgt gtgtgttcct 900  
attaatcaca ctcagtgagc cctctaagtc tagaggactc aaatctagtg attgtaatat 960  
gggagcaaaa tgatgtactg gcttctccac ctgcagcatt tattttctat attagtagta 1020  
ttattttatt tatgtatatt cagaatttat aaatttaaaa ctagtaaaat atttaagaat 1080  
ttcaattaca aacatttaaa cctaaatgat taagtattta caaagataaa ctttaaacat 1140  
attattcaaa tatgttatta gcagattaat taaaataaaa tatcaaaata agcattacct 1200  
aaaatgaaaa accttaatct ggaaaaaaag gtaaagtaat actatttttt ctttttaaaa 1260  
aggataaatt aggccgggca cagtagctca cgcctgtaat ccagcactt tgggaggcca 1320  
aggcggggcg atcacctgag gttgggagtt cgagaccagc ctgatgaaca tggagaaacc 1380  
ccgcctctac taaaaaatac aaaattagtt gggcgtggtg gcaggcacct gtaatcccag 1440  
ctactcgga ggctgaggca ggagaatccc ttgagcctag gaggcggagg ttgcggtgag 1500  
ccaagatcgc gccattgcac tctagcctgg gcaaaaagag caaaactcca tctcaaaa 1559

<210> 171

<211> 3106

<212> DNA

<213> Homo sapiens

<220>

<223> nbla20026

<400> 171

ttttcttgta cattttgcct cacctacctc aaggctagag cagttttgcc agctctgtgt 60  
gcttcacccc agctgcttgc agccagttag agaagctttc cattcttcct ggaccttctg 120  
ggcttgggga agctgtgggg ccatctatgg ctcccttaggc cacctgttcc acatgcatgt 180  
ctttagcatc aaatgtgctg gttgtgggag gaccatggga cttactggc ttcctacact 240  
gcttgagaa cagaagggtgc aagtgatccc tgttttcagg ttcatataac ctattgtggg 300  
gttcttctgt tcccctccca gggatgagtg atgaggactc agggctcctt cccacagatg 360  
cttgtcccag acacagctgg gtctggctgc ttggcttccc ccgagaactc tccctgagcc 420  
ctctgcttat gacattgctt cacttttgtg acatcgctta atttttgtga tgttgcttca 480  
cttttgcatt attttatcca tcagaaagaa ggcaccaggt ctaaccacaca ctctgaaaa 540  
ggggattgca cagaggcaca aagacctctg gtgtttccag tccgggtaga ctggctgtca 600  
ccactggggc actggtgggt acctgtgagc tgatgagtg gaccaaaccg ctctggccac 660

cttggacccc attcctccca ggctttgtct ctccctgagc cctgcgcttg agaacattaa 720  
aagccatgcc ttggaccccc ttgttctgag tcttgccatg ggccgtgagg acagccggcc 780  
actcttcttg gtgagcagat tgtcacttgg ctccagctgc acgtccagct cttccgctgt 840  
tttgctcacg gtaaatgcgt cactggagaa gggaagggtg atttttgcgg ttccacgtgc 900  
ctggcacaag gataatcatt ggtaaggaaa cttgttggag aatgtgtgaa ggcccagggt 960  
ttgttcttct ctctcttcca gctgtgctta ctggctggag agaagggttt ggattcgtct 1020  
cgttactctt ggctgctggg ccttcttccc tttgtcggct gttcagaagt gggaaaatat 1080  
atatTTTTTT atccctctcc ttctttgtct ctttgtctgt gtctgtctgt ctgtctctct 1140  
cacgcacaca cctccatcc tctgatccca ttctagcttc cctgctttat tcccactga 1200  
tttctttaat gcccacatca catataaact aaaccatttt ctgttccttg cgttctggct 1260  
cttgggtggg cctagttaac cagctttcac agggcagcgt tcccccttg gtgtgattca 1320  
cattaaagggt gagacttaga cgctgtctga agtgcaggca atttactctg gcagcaatct 1380  
cacaacacgg acagcaggag caggctgggt gccaaacaca aggtccagat gaccacccga 1440  
ctgggaaggg tctccatctg gcgaccgttc tcggagttag agggattctt cctcctttct 1500  
tacacctgta ctcatccag gtcagttccc aggtgtttct ttcataatgg agctttaagc 1560  
tattctggta agggtagct ttgttttaag gttgtgaaa gttgtgtctg tgctagatgg 1620  
ccttatctct agggcaacta ggattttggg atccagttag catagagacc cagtaatccc 1680  
tgggccaggg ctggaaatcc caggccagggt tgcatacat tgctaagtgt gtaggtcctg 1740  
tgagatgttt gagggtggct atggctgtca ttaatttat agccatggta tctcatagta 1800  
tactacagtg tgtctttgtt tgtgttagtc tactggaaat gacctctct tatgactcta 1860  
acatttacc ctttcttaa aaaaatctgc tgtaaagcaa tatttacaat cagaaacctg 1920  
gaaaatatac aaatatatat ctctacatt gtagaatgat ttctatgcat atatataat 1980  
aagaaatagc gaaatgtata aagtagaaag caaaacccca taactttatc acctggctgt 2040  
aatcattccg attcattctt ttagattatt tttcttctt ctttctttt ctttcttct 2100  
ttgcaactcc ctgatatgat gagagatcct tgaggccac ttcaagtga agtctctca 2160  
gacacctttt tatatcatta ttctagcca aaagagatgg tgtctttctc agtacccta 2220  
gaatgttagt gtcctgtctc gtcactgtgt gttcgggtc attgtattag ttatctattg 2280  
tattgcaaat tcccccaaa attatctatt gttgtattgc aaaaattact attgcaaat 2340  
agtggcttaa aacagcagcc atttactatt acacagtctc tctgggtcag gagtctgtat 2400  
ccagctttac taggttctct gtccaggatc tctgacaggc tgcactcaag gtgtcagcgg 2460  
actgcagtct cacctgaagg ctcggttagg ggggaactgc atccaggctt acgcatggct 2520  
tgagggtctc caggccttgc tggctccctc agacctttgc cacatgggcc tctctgttga 2580  
gcagctcact gcatggcagc tggcttccag cagagtacc aggggagaca gcaagagagc 2640  
ctttttgtaa tctgatcttg gaggtgacat tgccttact ctgtcatatt ttattcatta 2700  
ggaagaagtc accaggctta accacactc atgggaagag ggttgacaaa aggcataaag 2760  
accaggaggc agggaccact ggggtccatc caagaagttg cctgccgcag acaatcctgc 2820  
ttatgagcct gtgctggact gcatgccatc ttgggcagag ccctgcctta tctttatatg 2880  
tctaatgaga tctgtatctt tgtgcctgat gggcactcag aaaccactt tgcgtttccc 2940  
tctttcgtct ctcatagcag gcgtggtggc atacgcctgt ggtctcagct gcttgggagg 3000  
ctgaggcagg agaattgctt gaacttgcga ggtggagggt gcagtgagcc gggatcacgt 3060  
ggctgcactc cagcctggct aacagggcaa gactctgtct caaaaa 3106

&lt;210&gt; 172

&lt;211&gt; 1668

&lt;212&gt; DNA

<213> Homo sapiens

<220>

<223> nbla20421

<400> 172

```
ctttctgcgc tagtttatta catttagtac atttgtattg tatgaaaagc aacagcccag 60
attatttgat ccccgctcgt gttaatcttt ccttcctgcc tctcccittt tttttttgc 120
ggcggcgggg gcggttggcc tttctttgtt ttgtttttt tttctatgtt cctgtccctt 180
atttttaaaa atctctttta gcaacaggga tatcatcacc acgctggat cctcacatgt 240
gtgggttttg ctgagctagt agaaaatgat ccaaagatga ttggtgacca aatgtctgat 300
tgcaacattt cgttttcctc cgtggtacat agctccaggc tgccagtctc ctatttgttg 360
ataatcccgt gggcactggg ttcagttatg tgaatggtag tggcgctat gccaaaggacc 420
tggctatggg ggcttcagac atgatgggtc tcctgaagac cttcttcagt tgccacaaag 480
aattccaggt aagcaaagac tcaggaacag ctaagtaaag ggctggcaat atcaactcta 540
catccatcag cataaacctg aactgcctcc agagttaaag gcctagctga tttcagagaa 600
aactttttta ttcccaagat tgggttggg acttttgtt ctgtcatctc taaagttgat 660
atttaacttg aaagaatgac ctggagtgga gcattctaag cagacgcaat aatcagatat 720
ggagtgggtg gggaggaaga caaagcagat ttgtttttt ctggtcatta cgtgcaatag 780
aaatttgaaa ttaatttgtg tgactcagaa agcaatcaag gtagttaatt ctgtgtaaat 840
tccttttctt gctagacagt tccattctac attttctcag agtcctatgg aggaaaaatg 900
gcagctggca ttggtctaga gctttataag gtaatggaaa ataactttgt tgttatggtt 960
ttggacagaa aatcaattat gttactttta tgtactcacg tgctattaaa tatactttga 1020
atagggccat gtacatgcag agtacgatta aatctgtagt aataaccata aaaagttttt 1080
aaaagaagaa tgaagattgc cctgctagat ctggaacaag atataaagca tgagttagta 1140
aaagaatgtg gtactaacat agcaatagac aaatagggtt attgcaacag gatacagaat 1200
ccagaaacac acacacatat atatgtatgt gtatcatata tttgtatttt atataaatat 1260
atatgatcat atataaatat aagataacgt ttcaaatcat tggggcatgg atataatgtc 1320
gataaatgtt atggagacaa atacctatca ctttggaaaa tagaaaactt gtattcctgc 1380
cttgtataaa atattaattc tggatggatt aaaatctaaa cataaaaata aaaataatgg 1440
agacaaatac ctatcacttt ggaaaataga aaacttgtat tcttgccctg tataaaatat 1500
taattctgga tggattaaaa tctaaacata aaaataaaaa ttaggacaga atgcagtggc 1560
ccacgcctat aatcccagca ctttgggaag ccagggcagg aggactgctt gtgaccagga 1620
gttcagacc agcctgggca acatagcgac accctgtttc tacaataa 1668
```

<210> 173

<211> 1559

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22298

<400> 173

```
gctgaaaagg gaaaaatcgt gggcaattct gacgccagt agcattgcca gttcttcctt 60
```

caggcactgt tctataggga aggaggttag aaactcagat tcatggatgt tgctaagagc 120  
 aaccggaac tcagacattt ttactgtgc tttccttggc atgccaactc gaaggagaaa 180  
 tgttagcaat ggggcacagg gagaaccgt gccagtaggt atggtattgt taggtaaaat 240  
 ggagcagcct tgcttgtttg gggaaccttt cagtctcccc aactatggac tatcgggttc 300  
 ctgattttcc aagtcctgtc tgagggtggg atgttgtgtg gatgatgtct tccccctctg 360  
 cagtgttgtt ggcacacaca gacgtgtgaa ccttgaccac aggctcgaca caccctgggtg 420  
 tcatcgggtg ggttgtgttc cagtggccct gagccaagca agacccagg aaagactctg 480  
 gaaaactgaa gggggctgga tgtcacccac agtacatacc ttgtgcctgt aacgaagcag 540  
 gcaactggtt catttaggaa aggtattgtg tccgaagccc catttttaga ctgttaaaag 600  
 tatacaaca gaaacgaaca ccattgcctt aggtgcaaag cacacttttt tattttaata 660  
 gaagcccagg cttgcacaac accaccttca tgaagattgg tcatttctga ggatgacaaa 720  
 accacaaagt ttattgagat tgctccttca ttgacagtct ctaagcactt cagaagcaat 780  
 gacaaggcaa actctgtggg atgatgacaa ggttccctcg cgctgcggca gtggagagtg 840  
 tgtctgagcc aggtgtctg tggggagacc ccacccacc cctgagacct gggtgacttg 900  
 gcacctgtcc acggctctgc ttctccatcc acaaatggga aatatcacag gccctgcctt 960  
 gtgtgttatt gatataagaa cttggaaaag agcttgcctg aatagtaagc atggtagatg 1020  
 ttggtgcaa taaataattg tgttctggg aactcagcaa cattaggata atattaaaaa 1080  
 taaaatttaa agatttttct gggatatgtg ttaattgcaa cggttaaata aggtaaactt 1140  
 catgaagaca tgtatagaat tttagttatc tataggtaaa ctacttattt taattcatca 1200  
 tggactaagg ggacaaaact gcaccacac acacacatac acacacacaa acgtacacac 1260  
 agtaaataat ttcatgatat cgtctaggga tgtcaaatta acaaaaatta acataaaaaa 1320  
 agatgcattt tcaatgagat tatcatcaga tattttttat gaacagctta aatagaatga 1380  
 agacttgga ggatttgggg gaaggctcgc atgtgagtgt gtgtgtttgt ttgtgtgtgt 1440  
 gagtgtgtgt gtgtttgcc ttttttccct ttgttttcag gatagttcca ttagaaaaa 1500  
 aaagctttcc taccaaatit gcagatatct gcaataata ttctgccaag aagcaaaaa 1559

<210> 174

<211> 1557

<212> DNA

<213> Homo sapiens

<220>

<223> nbla22549

<400> 174

gaaaaaacta aagtaccttg aaaggttaca cattcagcaa accatgaaga taatagctat 60  
 tctttattaa aactgtgtg ccaagcaata gactaggcaa tttttagata cgttacctgc 120  
 aacctgtaca acatttctac actttatgga tgggaaacgg agacatggga agtgtggctg 180  
 agttgttcat ggatgtagaa atagtaaagc gcagagtagg aaagtgaac cgcctatctc 240  
 tgacctggag gtctgcctgt atctttccca ctccaccaca ctgcacgtgg gtgtcccgaa 300  
 accaccttcc cagattcctg actctcagta attttattat ggacaacatg catgagtagt 360  
 catcatattt ttcaagtga atatcgggac atgatataac acatgactta acaatggtac 420  
 tgaatatatt aaatcaggcc tttcccgaa aatcatgcat gaaggatcat tataaacaaa 480  
 catagcaacc agttgtctcc ccgaacttgt cacttttctc ataaatgtct ggctggagc 540  
 tccaaaatca tccaaatact tagtagcatt ttagcctgag tacactttct cagttcctca 600

actctttgta tacctttcca ccaatataga cattctagaa tctgcttcag atgcatttga 660  
 aattttcacc cccatggaac tagtgattaa tatcagagcc cactcttgca gttggtaatg 720  
 ggggtggcaat caaacgttca gatgatgata aaggagagat aatggataat tctttttcag 780  
 agttctcact taacagctct gtgttggaat gttttaata gtcttataaa taatttggtt 840  
 atagtattgt tgtagttta attgaatttt atgtaagaag ctgtccaaca tcagagaaat 900  
 gaaattcctc ccactttctg tgtagaaca ggtctctgac agtatigatt catggaagta 960  
 ctaatggact tagaaaacat taagagaatg tcatttctca tagtgtttct gtttctgaaa 1020  
 atgaatctcc tgaattatta tctttctccc tgttacttgg ctggggaaag agatagaagc 1080  
 tgtataaaca aattctcttc catgctcaaa gcaagtgttc catgtgcaca acctgctgca 1140  
 gactggggcc cttctcagtt aattgggttt cacaagcaat aatttctcca caacaaaaac 1200  
 cacaacttga agtgagtga aaagagatca atagtggaaa cagtcgcctc agtacttttt 1260  
 ctttctggat ttcactctta gaaatttgaa gtgtttgaga cagagtccac ctttctgca 1320  
 aggcgagaac caatgaatgg actccttggtg tgaattattg catcttcttc caaagcaggt 1380  
 tcatcaagac tttcacagag attcattttt gttgagaagt aagggttaat aggaggatag 1440  
 aatttgatc caaatctagt gataaaagtg tccaagcaat cataaagtaa gatatttttag 1500  
 ggacatacca acatcttccc tttctgctaa tttcatgctc caaagatatg gcaaaaa 1557

<210> 175

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22420-1-1f

<400> 175

gcctactgga atggaaacac

20

<210> 176

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22420-1-1r

<400> 176

caaaggctat ccaaaagcaa

20

<210> 177

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22689-1f

<400> 177

cggattctgg tgggttctt

19

<210> 178

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22689-1r

<400> 178

agagtgaggg gaacaaagtg g

21

<210> 179

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24135-1f

<400> 179

gaggacacca gcgtagaaga g

21

<210> 180

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24135-1r

<400> 180

ggaagaaact gaggcagagg

20

<210> 181

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24350-1f

<400> 181

tcccaggaga aatgaatgg

19

<210> 182

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24350-1r

<400> 182

gtgtttggcc ctttggag

18

<210> 183

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23701-1f

<400> 183

agccctcacc ccaagtaaag

20

<210> 184

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23701-1r

<400> 184

cagcgagcta gagtgaacga

20



<210> 185

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23890-1f

<400> 185

tggaagac accggaag

19

<210> 186

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23890-1r

<400> 186

ccttgacag gttttgttg g

21

<210> 187

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21650-1f

<400> 187

cagtttctc cacgtccaa

20

<210> 188

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21650-1r

<400> 188

atgggtggct gagatgagg

19

<210> 189

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22094-1f

<400> 189

ggtcaggatt tccccttttc

20

<210> 190

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22094-1r

<400> 190

tcctagaagg ctgggctaca

20

<210> 191

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22739-1f

<400> 191

cgacgaatct ctgcaatctc t

21

<210> 192

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22739-1r

&lt;400&gt; 192

tgcccatgaa tctcctaacc

20

&lt;210&gt; 193

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23525-lf

&lt;400&gt; 193

tctgccatca acttctttcc t

21

&lt;210&gt; 194

&lt;211&gt; 23

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23525-lr

&lt;400&gt; 194

ccatctcttt ctttcttgca ctc

23

&lt;210&gt; 195

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20226rl-lf

&lt;400&gt; 195

caagcaacaa tgacgaatga g

21

&lt;210&gt; 196

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla20226r1-1r

<400> 196

ggaggaatga gaatgaggtt tg

22

<210> 197

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22182-1f

<400> 197

ttggaagcag gacatggata g

21

<210> 198

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22182-1r

<400> 198

tggacacatg gtggtgaaag

20

<210> 199

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23256-1f

<400> 199

ttgggggcag gagattac

18

<210> 200

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23256-1r

<400> 200

cctggctaca tagagaaacc aa

22

<210> 201

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21297-1f

<400> 201

acaacgctag tcccacttac aac

23

<210> 202

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21297-1r

<400> 202

gctcctctgg ctcaacaatc

20

<210> 203

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20787-1f

<400> 203

gagataggtt ctcttctgag tttgt

25

<210> 204

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20787-lr

<400> 204

caggtaagtt tgcctccat c

21

<210> 205

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22284-lf

<400> 205

ctaccgatcc ccagacaca

19

<210> 206

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22284-lr

<400> 206

cagcaacagc cagaacca

18

<210> 207

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20123-lf

<400> 207

cgagagccat gcaaaaacac

20

<210> 208

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20123-lr

<400> 208

gcacagaaaa tggaggcaga

20

<210> 209

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20382-lf

<400> 209

gttcagtgca gtcaggatgg

20

<210> 210

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20382-lr

<400> 210

gtcacactct ttgctttgct tg

22

<210> 211

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20660r1-lf

<400> 211

gcgttcttcc acaccaaac

19

<210> 212

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20660rl-1f

<400> 212

tccgaggaaa agtgcttac

20

<210> 213

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20666-1f

<400> 213

tctggctggg tttatagctt g

21

<210> 214

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20666-1r

<400> 214

taccggctgt tgggttg

18

<210> 215

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21239-1f



&lt;400&gt; 215

gcccagccta tgtctgtatc

20

&lt;210&gt; 216

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21239-1r

&lt;400&gt; 216

tcctggtaca ctgcctcttc

20

&lt;210&gt; 217

&lt;211&gt; 25

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21729-1f

&lt;400&gt; 217

gacatttcta ccaatctgtg tgtct

25

&lt;210&gt; 218

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21729-1r

&lt;400&gt; 218

cacttgtgct tcttttctct gg

22

&lt;210&gt; 219

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

<220>

<223> Synthetic Primer: nbla21831-lf

<400> 219

ggaaccgtag actgttcgt g

21

<210> 220

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21831-lr

<400> 220

actcccagaa ttggaatgga

20

<210> 221

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22826-lf

<400> 221

gcaatccttc cccttcctt

19

<210> 222

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22826-lr

<400> 222

tgtcacgacc ttccctgttc

20

<210> 223

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23899-1f

<400> 223

cagggggatt gataacacag a

21

<210> 224

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23899-1r

<400> 224

ggatgaaatg caaggcagag

20

<210> 225

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20578-1f

<400> 225

catctgcatc caaaccaaag

20

<210> 226

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20578-1r

<400> 226

agttagaatc ccaagccgaa g

21

<210> 227

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21908-1f

<400> 227

agtctgcggg tctggtttct

20

<210> 228

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21908-1r

<400> 228

tgcaaagttc ccctgcttac

20

<210> 229

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22027-1f

<400> 229

agttggtgga tggatcttgg

20

<210> 230

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22027-1r

<400> 230

gatgaaccga aacaggaagg

20

<210> 231

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22082-1f

<400> 231

tgtgctgaaa atccgaagtg

20

<210> 232

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22082-1r

<400> 232

gcaatgtagt ggggtcgaag

20

<210> 233

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23303-1f

<400> 233

cttgagctga gatggactgg

20

<210> 234

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23303-1r

&lt;400&gt; 234

cagcaggcag attccaaag

19

&lt;210&gt; 235

&lt;211&gt; 25

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20264-lf

&lt;400&gt; 235

gtcttctcta ccctctccct taatc

25

&lt;210&gt; 236

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20264-lr

&lt;400&gt; 236

caccagtctt agcagcaaca

20

&lt;210&gt; 237

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20269rl-lf

&lt;400&gt; 237

agccaaactg gaggtgatg

19

&lt;210&gt; 238

&lt;211&gt; 18

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla20269r1-1r

<400> 238

ccgtgaaagg ctgaaagg

18

<210> 239

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20406-1f

<400> 239

tccaactcac agaaatgcaa g

21

<210> 240

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20406-1r

<400> 240

aagtctcatc caaagccaaa g

21

<210> 241

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20949-1f

<400> 241

ttcaaactat accctccctt tg

22

<210> 242

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20949-lr

<400> 242

cagttgggtt ccacattcct

20

<210> 243

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21251-lf

<400> 243

cttctttccc aagtgccaaag

20

<210> 244

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21251-lr

<400> 244

tggctcaata accacaggaa g

21

<210> 245

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21334-lf

<400> 245

tggctgggtt attcccttt

19

<210> 246

<211> 25

<212> DNA



<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21334-lr

<400> 246

gttcaatgtt ctcttgctac ttgtg

25

<210> 247

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21356-lf

<400> 247

actgaggaga tggagtgggt g

21

<210> 248

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21356-lr

<400> 248

atatgggctg atggttgga

19

<210> 249

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21418-lf

<400> 249

gagggtgagc tgggatatgt t

21

<210> 250

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21418-1r

<400> 250

accggcctct ctgttttct

20

<210> 251

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21480-1f

<400> 251

tgggagcaga acaaaatgaa

20

<210> 252

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21480-1r

<400> 252

aacaccatca accagaacag ag

22

<210> 253

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21509-1f

<400> 253

caaagacagt ggaagctgga

20

<210> 254

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21509-1r

<400> 254

ctgtttgtcc caggaggtg

19

<210> 255

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21527-1f

<400> 255

ggacaggtag tgtttgggaa g

21

<210> 256

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21527-1r

<400> 256

cgtacccag atggagaga

19

<210> 257

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21551-1f

&lt;400&gt; 257

caggaaaacg tggaagttgg

20

&lt;210&gt; 258

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21551-lr

&lt;400&gt; 258

acagtgccca gacacacaga

20

&lt;210&gt; 259

&lt;211&gt; 23

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21735-lf

&lt;400&gt; 259

catggctcta aaaggacaag aag

23

&lt;210&gt; 260

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21735-lr

&lt;400&gt; 260

tgcctgaagg aactgaaga

20

&lt;210&gt; 261

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla22247-1-lf

<400> 261

caccgtcctc acattcaca

19

<210> 262

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22247-1-lr

<400> 262

ttcatccaag ctcgacacac

20

<210> 263

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22477-1f

<400> 263

cataggaggc ttgttttcca

20

<210> 264

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22477-1r

<400> 264

tcgtaggcaa atcagtcaaa g

21

<210> 265

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22639-1f

<400> 265

tgacagcaac ctgcaaagag

20

<210> 266

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22639-1r

<400> 266

aagggataga caccgcaaca

20

<210> 267

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23174-1f

<400> 267

ggagggatca ccaaaacaaa g

21

<210> 268

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23174-1r

<400> 268

ttatgctctc tgaaggggaa tg

22

<210> 269

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23198-1f

<400> 269

acaggcagtc ctcgctttc

19

<210> 270

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23198-1r

<400> 270

cagggtagct gtaaaaatgt tggt

24

<210> 271

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23328-1f

<400> 271

tgacacacac aagactcaag acc

23

<210> 272

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23328-1r

<400> 272

atccaggcaa tatccacacc

20

<210> 273

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23420-1f

<400> 273

ggagcacagg ccatcaaag

19

<210> 274

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23420-1r

<400> 274

aggggacgaa ctctgaaaca a

21

<210> 275

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23483-1f

<400> 275

gtaagtacgt gagccagtca tcc

23

<210> 276

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23483-1r

<400> 276

cacctgtaac tgaccagagc aa

22



<210> 277

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23808-1f

<400> 277

tgttatgatt ggtcaggggt ct

22

<210> 278

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23808-1r

<400> 278

caggtggat tagtgtctc tc

22

<210> 279

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23851-1f

<400> 279

cttttgacgg ggatttttg

19

<210> 280

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23851-1r

&lt;400&gt; 280

accaccgtta ccagtttgtg

20

&lt;210&gt; 281

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24011-1f

&lt;400&gt; 281

gctgcaactg agacactgga

20

&lt;210&gt; 282

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24011-1r

&lt;400&gt; 282

gtagcccatg aagtgggaag

20

&lt;210&gt; 283

&lt;211&gt; 25

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24235-1f

&lt;400&gt; 283

gagatgaaat gtcttgagga atgag

25

&lt;210&gt; 284

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla24235-lr

<400> 284

tgcaaagatg aaatggtcag g

21

<210> 285

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24556-1f

<400> 285

gagcacaaag gatgggtagg

20

<210> 286

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24556-lr

<400> 286

ctgggagaca gacagaacac a

21

<210> 287

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24800-1f

<400> 287

tgctgagtga tcctgttgag

20

<210> 288

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24800-1r

<400> 288

gccagggttt agcatctgt

19

<210> 289

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20001-1f

<400> 289

acagtcttct gttaggggat gg

22

<210> 290

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20001-1r

<400> 290

gcagtatgaa cgcgacaaag

20

<210> 291

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20083-1f

<400> 291

gccagaatag aaggagaga ga

22

<210> 292

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20083-1r

<400> 292

tcttaccac ccaaattccat ac

22

<210> 293

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20182-1f

<400> 293

atttgagtga ggccaacagg

20

<210> 294

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20182-1r

<400> 294

ctggtgcttt gggtatgga

19

<210> 295

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20248-1f

<400> 295

gcagaataac taaggcaca ca

22

<210> 296

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20248-1r

<400> 296

gaatcccatc aaacagacag ag

22

<210> 297

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20250r1-1f

<400> 297

ggcccatagc cagatactcc

20

<210> 298

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20250r1-1r

<400> 298

taggcatacc ccctttcca

19

<210> 299

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20330-1f

<400> 299

gccaaaggtga cagaggagtt

20

<210> 300

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20330-1r

<400> 300

gttccagttg tttccggttc

20

<210> 301

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23983-1f

<400> 301

gctcctagat tgtactgggg ttg

23

<210> 302

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23983-1r

<400> 302

tggcttttgg aagaactgga

20

<210> 303

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24111r1-1f

&lt;400&gt; 303

tctgcatcag gcttagtgt gt

22

&lt;210&gt; 304

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24111r1-lr

&lt;400&gt; 304

ctggcatittt gaggatattg g

21

&lt;210&gt; 305

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24142-1f

&lt;400&gt; 305

tctgaaccct gttaccattc c

21

&lt;210&gt; 306

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24142-1r

&lt;400&gt; 306

tgatgaaagc cgtgaacaac

20

&lt;210&gt; 307

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;



<223> Synthetic Primer: nbla24157-1f

<400> 307

cattctcatg tctccatttg ct

22

<210> 308

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24157-1r

<400> 308

ctttcttttct accatgcgct ac

22

<210> 309

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24230-1f

<400> 309

gtctgccacc caataagca

19

<210> 310

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24230-1r

<400> 310

cctccacaac aggcacatc

19

<210> 311

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20541-lf

<400> 311

tgagtggact tcggttcctt c

21

<210> 312

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20541-lr

<400> 312

aggcagcatt cacccttaac a

21

<210> 313

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20555-lf

<400> 313

agtatgtgcg ttccgtggt

19

<210> 314

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20555-lr

<400> 314

gtgctagggg atgggtaatg

20

<210> 315

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20645-1f

<400> 315

cgctgaatat ggaggcaaag

20

<210> 316

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20645-1r

<400> 316

gcccctttct tggaggtg

18

<210> 317

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20713-1f

<400> 317

ctcccccatc gtatcctttc

20

<210> 318

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20713-1r

<400> 318

gtccggcctt tggttttc

18

<210> 319

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24250-1f

<400> 319

ggcatttggg gacctcttc

19

<210> 320

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24250-1r

<400> 320

ctgtcttctt tgccccttcc

20

<210> 321

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24254-1f

<400> 321

acttggtgcc tgaagaagag a

21

<210> 322

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24254-1r

<400> 322

actgcgttaa gatggaaaac c

21

<210> 323

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24327-1f

<400> 323

ggtgctctac tactcccctt ttc

23

<210> 324

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24327-1r

<400> 324

ggcatcatc agttcctttg ct

22

<210> 325

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24510-1f

<400> 325

ggcattagcc tggaagaggt

20

<210> 326

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24510-1r

&lt;400&gt; 326

cgcctgcgac tgaaaaag

18

&lt;210&gt; 327

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nb1a24554-1f

&lt;400&gt; 327

atgacagggt gggcttttac

20

&lt;210&gt; 328

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nb1a24554-1r

&lt;400&gt; 328

ccagtttcgg gatgtcctt

19

&lt;210&gt; 329

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nb1a24604-1f

&lt;400&gt; 329

ctttccctct tccccaaaac

20

&lt;210&gt; 330

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

<220>

<223> Synthetic Primer: nbla24604-1r

<400> 330

cttcccagaa cagcaagca

19

<210> 331

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21037-1f

<400> 331

cctgctggtt gacctctcc

19

<210> 332

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21037-1r

<400> 332

ctcatcctca tccgggtct

19

<210> 333

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21161-1f

<400> 333

actcgctgc ctgattctt

19

<210> 334

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21161-1r

<400> 334

cacttttcca caaacctcca c

21

<210> 335

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21170-1f

<400> 335

gctgcttcct ctttggttct

20

<210> 336

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21170-1r

<400> 336

ccaagtttgc atgtttttgg

20

<210> 337

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21198-1f

<400> 337

ctgcctttcc accttgct

18

<210> 338



<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21198-1r

<400> 338

gtgtctgctg gtgctcctc

19

<210> 339

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21298-1f

<400> 339

taacttgcc ttggtgttg

20

<210> 340

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21298-1r

<400> 340

caacctgcct ctgaatatg

20

<210> 341

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21379-1f

<400> 341

cgatagcagg tacaatgaag g

21

<210> 342

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21379-1r

<400> 342

cacataaggt aagagatagc gaaag

25

<210> 343

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24705-1f

<400> 343

agggctaggt gtgggttttc

20

<210> 344

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24705-1r

<400> 344

gccccctcttt gcactttact c

21

<210> 345

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21385-1f

&lt;400&gt; 345

tgcttgctga aaagtcgaaa

20

&lt;210&gt; 346

&lt;211&gt; 23

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21385-lr

&lt;400&gt; 346

tagcgatgga aactaagaga agg

23

&lt;210&gt; 347

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21416-lr1-1f

&lt;400&gt; 347

gccaaaatca tcaccaagga

20

&lt;210&gt; 348

&lt;211&gt; 18

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21416-lr1-1f

&lt;400&gt; 348

attccccctc cctccaaa

18

&lt;210&gt; 349

&lt;211&gt; 24

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

<220>

<223> Synthetic Primer: nbla21599-1f

<400> 349

gagagttggg agatgtaagg aaag

24

<210> 350

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21599-1r

<400> 350

gtgatatggg tccctgtttt gg

22

<210> 351

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21681-1f

<400> 351

ggtaggagca atgactgttg g

21

<210> 352

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21681-1r

<400> 352

tcgtcagctc tgcttttgag

20

<210> 353

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21878-1f

<400> 353

ggaaggcaac acattcctac ac

22

<210> 354

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21878-1r

<400> 354

caaggtcatt ctgggctct c

21

<210> 355

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21922-1f

<400> 355

caccaagcag tgtgcctaaa

20

<210> 356

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21922-1r

<400> 356

tgaggaaacc cctaatac tatic

24

<210> 357

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22004-1f

<400> 357

ttggaatgtc gtgtgtgtgg

20

<210> 358

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22004-1r

<400> 358

aggtcagagc aatgagtga gg

22

<210> 359

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22004-2-1f

<400> 359

cagtaagtgc attggcagga

20

<210> 360

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22004-2-1r

<400> 360

gcttttatg gctgctgtgg

20

<210> 361

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22085-1f

<400> 361

acccaattta acctcccttt ct

22

<210> 362

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22085-1r

<400> 362

tgcaaaagca aagagcacac

20

<210> 363

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22119r1-1f

<400> 363

gaggccacat gaaagaca

18

<210> 364

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22119r1-1r

<400> 364

ctgatgacag ggcagaga

18

<210> 365

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22149-lf

<400> 365

ccagtgtttt gctcttggt

19

<210> 366

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22149-lr

<400> 366

gaaatcctca cttggatggt

20

<210> 367

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22161-lf

<400> 367

cgaagttggt gttttctctg tt

22

<210> 368

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22161-lr



&lt;400&gt; 368

taactgatgc cccttagtct tg

22

&lt;210&gt; 369

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla22252-1f

&lt;400&gt; 369

tgagggtcctt cttgcttggt

20

&lt;210&gt; 370

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla22252-1r

&lt;400&gt; 370

ccatttggtg tgcctatatt tg

22

&lt;210&gt; 371

&lt;211&gt; 23

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla22347-1f

&lt;400&gt; 371

ccttgaggtt agaagagaaa gga

23

&lt;210&gt; 372

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

<220>

<223> Synthetic Primer: nbla22347-1r

<400> 372

agaaaggaag ggcagaaatg

20

<210> 373

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22352-1f

<400> 373

tggcattttc attgctacct

20

<210> 374

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22352-1r

<400> 374

tggaaaccct aagaatcacc t

21

<210> 375

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22394-1f

<400> 375

tggtgagaga cttccgcttt c

21

<210> 376

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22394-lr

<400> 376

ctggctgtgg tttgctttct

20

<210> 377

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22423-lf

<400> 377

cagggaagaa agccacagaa g

21

<210> 378

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22423-lr

<400> 378

ggcctgaaaa gtcagagaaa gg

22

<210> 379

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22439r1-lf

<400> 379

ccatttggtc ccctccttgt

20

<210> 380

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22439r1-1r

<400> 380

ctttgagagg cgctttgatg

20

<210> 381

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22633-1f

<400> 381

caggaagacg cagggaag

18

<210> 382

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22633-1r

<400> 382

ggccttgacc ttgtggtg

18

<210> 383

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22698-1f

<400> 383

acttggcatc ttactgatgt gattg

25

<210> 384

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22698-1r

<400> 384

gctttcttat acctgggaaa tcttg

25

<210> 385

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22896-1f

<400> 385

tcgaggtgac tcttctgacc

20

<210> 386

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22896-1r

<400> 386

agggacagct tcatttcca

19

<210> 387

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23167-1-1f

&lt;400&gt; 387

tagagacccc ttcctatgca ac

22

&lt;210&gt; 388

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23167-1-lr

&lt;400&gt; 388

ggctacagtt tgcctctcca

20

&lt;210&gt; 389

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23339-1f

&lt;400&gt; 389

tctcagctcc agtaattcca ca

22

&lt;210&gt; 390

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23339-1r

&lt;400&gt; 390

gaaataaccc caattccacc a

21

&lt;210&gt; 391

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

<220>

<223> Synthetic Primer: nbla23352-1f

<400> 391

ggattggatg actccttgct

20

<210> 392

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23352-1r

<400> 392

gactccctct ttctcccttc tc

22

<210> 393

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23575-1f

<400> 393

ccagatattg atttcagagg gaca

24

<210> 394

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23575-1r

<400> 394

tggggacaag gggagaaag

19

<210> 395

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23592-1f

<400> 395

tgatggcact tctaactctc ct

22

<210> 396

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23592-1r

<400> 396

gatcttgtac ttcggccttt g

21

<210> 397

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23601-1f

<400> 397

ccagcagcaa aggaaaactc

20

<210> 398

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23601-1r

<400> 398

ctgggacaat tcaaaagcct ac

22

<210> 399



<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23630-1f

<400> 399

aaacgggctt tagtcatttt aggag

25

<210> 400

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23630-1r

<400> 400

gcttttcccg cccacttt

18

<210> 401

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23754-1f

<400> 401

tcagtcgtag tgtccacctt actc

24

<210> 402

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23754-1r

<400> 402

ggccaacca tattcatcat ac

22

<210> 403

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23892-lf

<400> 403

gtccttcata cggccaatc

19

<210> 404

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23892-lr

<400> 404

cctgtatcat tagtccatgc tgt

23

<210> 405

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23956-lf

<400> 405

cttctaggtg taggaggtca gg

22

<210> 406

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23956-lr

<400> 406

ggagtaggca gtagagcaga ga

22

<210> 407

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20365r1-1f

<400> 407

tcagagggga cttcttgatt t

21

<210> 408

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20365r1-1r

<400> 408

aggttcttca ctagagttgg ttgt

24

<210> 409

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20378-1f

<400> 409

tgtaaacaatg caaaggaag g

21

<210> 410

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20378-1r

<400> 410

agttatttga gggagggaca ga

22

<210> 411

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20511-1f

<400> 411

acctcaaggc atggttgct

19

<210> 412

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20511-1r

<400> 412

ctgctgctcc aggtattttt gt

22

<210> 413

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21039r1-1f

<400> 413

agaagcaata accagagata cagag

25

<210> 414

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21039r1-lr

<400> 414

aaggaggat gagtagaaga ca

22

<210> 415

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21107r1-lf

<400> 415

cgatttttagc agggaataaa gg

22

<210> 416

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21107r1-lr

<400> 416

ctccaatcca aagatacaga aggt

24

<210> 417

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21367-1f

<400> 417

cggcatggag gactagga

18

<210> 418

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21367-1r

<400> 418

gccaacaggg aggtgattag

20

<210> 419

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21790-1f

<400> 419

atttctttga gtatctgggg tcgt

24

<210> 420

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21790-1r

<400> 420

caccacccat ctagtaccat tttc

24

<210> 421

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22253-1f

<400> 421

tatgagccag aggaggatgg

20

<210> 422

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22253-1r

<400> 422'

ggccaaggta ggtctttgat g

21

<210> 423

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22355-1f

<400> 423

atgctgacct tccaggctac

20

<210> 424

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22355-1r

<400> 424

tgtgtcttca tcctcctcca

20

<210> 425

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22832-1f

<400> 425

cggctgcttg aaactcct

18

<210> 426

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22832-lr

<400> 426

tcttcccggt gtcttttcc

19

<210> 427

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23755-lf

<400> 427

gcctctgatt tttagctctc ttg

23

<210> 428

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23755-lr

<400> 428

tcctgccatc atatccttc t

21

<210> 429

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24549-lf



&lt;400&gt; 429

catatcaagg ggcttctggt

20

&lt;210&gt; 430

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24549-lr

&lt;400&gt; 430

gcattcacag ccttcagttt c

21

&lt;210&gt; 431

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20084-1f

&lt;400&gt; 431

ggccagtggt ctctaccatc tc

22

&lt;210&gt; 432

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20084-1r

&lt;400&gt; 432

cacacacata caaaggtcag ca

22

&lt;210&gt; 433

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

<220>

<223> Synthetic Primer: nbla21081-1f

<400> 433

tcgaaaaaca cggagagca

19

<210> 434

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21081-1r

<400> 434

cacagaatca tggcggaac

19

<210> 435

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21420-1f

<400> 435

gaagctggga aatggtgag

19

<210> 436

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21420-1r

<400> 436

ggaaatactc atggctgtgg

20

<210> 437

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22452-1f

<400> 437

cagtgggagt caggaagga

19

<210> 438

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22452-1r

<400> 438

acacatgccc agaaagcac

19

<210> 439

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22595-1f

<400> 439

catgaccttc agatagttac cc

22

<210> 440

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22595-1r

<400> 440

attattgggt ggtagacaga ca

22

<210> 441

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22676-1f

<400> 441

gtggtttttg gtggttgag

20

<210> 442

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22676-1r

<400> 442

tactgtggca ggaaggaagg

20

<210> 443

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22909-1f

<400> 443

acacggacat tacaacctta ca

22

<210> 444

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22909-1r

<400> 444

caccaaagag aactcgataa ca

22

<210> 445

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24435-1f

<400> 445

tcagcactgg atttaggatg g

21

<210> 446

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24435-1r

<400> 446

gcagagcagt acattatcag gaag

24

<210> 447

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20146-1f

<400> 447

tccattactc aagtccaag gt

22

<210> 448

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20146-1r

<400> 448

agcgaagctg tcctgtgttc

20

<210> 449

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20170-1f

<400> 449

gactcgtcgt ttcccacct

19

<210> 450

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20170-1r

<400> 450

cctaatagcag ccaactcatac c

21

<210> 451

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20216-1f

<400> 451

catctctcca ttagcccaga ag

22

<210> 452

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20216-1r

&lt;400&gt; 452

agaagcgagg agtagggtga g

21

&lt;210&gt; 453

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20657-1f

&lt;400&gt; 453

gacgacttga ctgatgctgt g

21

&lt;210&gt; 454

&lt;211&gt; 23

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20657-1r

&lt;400&gt; 454

caaggacaca attaggaggt gag

23

&lt;210&gt; 455

&lt;211&gt; 23

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20688-1f

&lt;400&gt; 455

ctgtctgttg actctccaac etc

23

&lt;210&gt; 456

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

<220>

<223> Synthetic Primer: nbla20688-1r

<400> 456

ccttgggctt ctttcctatc c

21

<210> 457

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20755-1f

<400> 457

ggatggcaga agcatcaaag

20

<210> 458

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20755-1r

<400> 458

agggtttgtg ggggatagag

20

<210> 459

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21013-1f

<400> 459

tggctgataa tgcaatggtg

20

<210> 460

<211> 20

<212> DNA

<213> Artificial Sequence



<220>

<223> Synthetic Primer: nbla21013-1r

<400> 460

gacctttttg gcttctgtgg

20

<210> 461

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21172-1f

<400> 461

aatgctatgt tcagcagggt gt

22

<210> 462

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21172-1r

<400> 462

tgcaacttgcg tgatgtgg

18

<210> 463

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21200-1f

<400> 463

accatgagga aaacaactgg a

21

<210> 464

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21200-1r

<400> 464

aatgtcccgga ctctattatc tgtg

24

<210> 465

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21255-1f

<400> 465

cctgaagccc ctgtgtatct

20

<210> 466

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21255-1r

<400> 466

ccaaaagcca aattctctcc

20

<210> 467

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21345-1f

<400> 467

gtgcaaacc cctctaaac

19

<210> 468

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21345-1r

<400> 468

tgaccagatg aaacctctcc

20

<210> 469

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21410-1f

<400> 469

cctaaacacc aaaggaagg

20

<210> 470

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21410-1r

<400> 470

ctccatctct atcttctaaa cagca

25

<210> 471

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21522-1f

<400> 471

ttgatgtgcg gactcttaat ct

22

<210> 472

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21522-1r

<400> 472

aggtgggtat tggctttctc t

21

<210> 473

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21631-1f

<400> 473

actttctggg gtttctctgg

20

<210> 474

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21631-1r

<400> 474

gcctctgtaa aatgtggaat g

21

<210> 475

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21788-1f

&lt;400&gt; 475

actcccaaac agtccccttc

20

&lt;210&gt; 476

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21788-1r

&lt;400&gt; 476

tcctggcttt ctccagtcc

19

&lt;210&gt; 477

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21897-1f

&lt;400&gt; 477

caacagtga gttgggaaaa ca

22

&lt;210&gt; 478

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21897-1r

&lt;400&gt; 478

ggctctggtt agaagacaaa gg

22

&lt;210&gt; 479

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla22116-1f

<400> 479

catccccggt tgaatctct

19

<210> 480

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22116-1r

<400> 480

tcccagtcga catgcaaata c

21

<210> 481

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22223-1f

<400> 481

cattcttttg ggcctctttc

20

<210> 482

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22223-1r

<400> 482

tgggatctt atggcacct

19

<210> 483

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22344-lf

<400> 483

gtctgaagga acaggggaga

20

<210> 484

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22344-lr

<400> 484

gtctaattggg caaggaagga g

21

<210> 485

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22939-lf

<400> 485

gcaccattct ctggtttcct

20

<210> 486

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22939-lr

<400> 486

cacacctcca tactccatgc t

21

<210> 487

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23084-1f

<400> 487

gcactcgatg actaccaaaa ag

22

<210> 488

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23084-1r

<400> 488

ggataatgag taggttggt aatg

24

<210> 489

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23103-1f

<400> 489

agacggcttt tgcgtttg

18

<210> 490

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23103-1r

<400> 490

agaagttagg gctgggaagg

20



<210> 491

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23234-1f

<400> 491

ccgcatttcc aactgacc

18

<210> 492

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23234-1r

<400> 492

gatcccacaa gtttcccaca

20

<210> 493

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23369-1f

<400> 493

agccccaaat gagaaatcaa

20

<210> 494

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23369-1r

<400> 494

ggagctggag tgataagcag a

21

<210> 495

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23436-1f

<400> 495

cctagaatag ctggggagtg g

21

<210> 496

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23436-1r

<400> 496

cgagagcgtc aaagatacag g

21

<210> 497

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23511-1f

<400> 497

aatcaaggac aaagactcac ac

22

<210> 498

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23511-1r

<400> 498

agacacagta aacaggaag ga

22

<210> 499

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23860-1f

<400> 499

gtcagggagg tcatggaag

19

<210> 500

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23860-1r

<400> 500

gctctgataa gcaagtggaa ga

22

<210> 501

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23877-1f

<400> 501

tcctctcagg tgggcttg

18

<210> 502

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23877-1r

<400> 502

ctgtgcttgg atgctgtagg

20

<210> 503

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23998-1f

<400> 503

ctgtatcctg ctgttcattg tag

23

<210> 504

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23998-1r

<400> 504

agcaaaaagt cgtagcttgg t

21

<210> 505

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24043-1-1f

<400> 505

agatggtgat ctggaacatg aa

22

<210> 506

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24043-1-lr

<400> 506

cctattgacc cagcaagaaa c

21

<210> 507

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24402-1f

<400> 507

tggtatgggc actgaatgg t

21

<210> 508

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24402-1r

<400> 508

tgacagaaagg cagtttgttg

20

<210> 509

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24821-1f

<400> 509

tccctaaagt gattggetgg t

21

<210> 510

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24821-1r

<400> 510

gattggcaca ggttttgagg

20

<210> 511

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20026-1f

<400> 511

atcaaattgtg ctggttgtgg

20

<210> 512

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20026-1r

<400> 512

caagcatctg tgggaagga

19

<210> 513

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20421-1f

<400> 513

tgcaacattt cgttttcctc

20

<210> 514

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20421-1r

<400> 514

gctgttcctg agtctttgct tac

23

<210> 515

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22298-1f

<400> 515

ccaactatgg actatcgggt tc

22

<210> 516

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22298-1r

<400> 516

gtctttcctg gggctttgct

20

<210> 517

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22549-1f

<400> 517

atctttccca ctccaccaca

20

<210> 518  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla22549-1r

<400> 518  
gacaagttcg gggagacaac 20

<210> 519  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla22256-1f

<400> 519  
gcagccctct tcgtagttcc 20

<210> 520  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla22256-1r

<400> 520  
ctcgccctgg tctctgtct 19

<210> 521  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla22968-1f



&lt;400&gt; 521

cagtgcattt gggagatgtg

20

&lt;210&gt; 522

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla22968-1r

&lt;400&gt; 522

ctcaaaacgc caggaaagag

20

&lt;210&gt; 523

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24079-1f

&lt;400&gt; 523

gcctactgga aaagccactc

20

&lt;210&gt; 524

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24079-1r

&lt;400&gt; 524

ctgtgtgcaa atccctgct

19

&lt;210&gt; 525

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla20211-1f

<400> 525

acaacatggg caaccacct

19

<210> 526

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20211-1r

<400> 526

gtcgtcatcg tgcaaagtcc

20

<210> 527

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20469-1f

<400> 527

gctcttcacc tcaaagtgc t

21

<210> 528

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20469-1r

<400> 528

gagttagtcc tgctcatggt tc

22

<210> 529

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21250-1f

<400> 529

tcgcctctgc actagctctc

20

<210> 530

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21250-1r

<400> 530

gtgtaaacc acatgcctcc t

21

<210> 531

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22761-1f

<400> 531

gatgagaacg ccaaagca

18

<210> 532

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22761-1r

<400> 532

aattcgggtcc aactcagca

19

<210> 533

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23631-1f

<400> 533

gcctagagca atgtcgtgaa

20

<210> 534

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23631-1r

<400> 534

cgcaggaaga taagtgtgag g

21

<210> 535

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23711-1f

<400> 535

gaccctagac cacggacatt ac

22

<210> 536

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23711-1r

<400> 536

cgctcaccac catcaaca

18

<210> 537

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24532-1f

<400> 537

agggctcagt catggatagg

20

<210> 538

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24532-1r

<400> 538

gctgggcaca cacagtaaag

20

<210> 539

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24951-1f

<400> 539

tgttttctgc atcaggcttc

20

<210> 540

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24951-1r

<400> 540

catttggttc ccacttcttg t

21

<210> 541

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24348-1f

<400> 541

gacagagtag aagaggaaca tgaaga

26

<210> 542

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24348-1r

<400> 542

catcagtttg tgggaaggtt g

21

<210> 543

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24686-1f

<400> 543

tcgaaaagcc tgcggtgt

18

<210> 544

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24686-1r

&lt;400&gt; 544

taggcggggc tgagtgtatc

20

&lt;210&gt; 545

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24756-lf

&lt;400&gt; 545

ttgactgtgc ttgagaggtg

20

&lt;210&gt; 546

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24756-lr

&lt;400&gt; 546

cttggttggtg gagaaactgg

20

&lt;210&gt; 547

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24521-lf

&lt;400&gt; 547

gccaaaatgc aaaggagaag

20

&lt;210&gt; 548

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

<220>

<223> Synthetic Primer: nbla24521-1r

<400> 548

tatggtccca aaggtggatg

20

<210> 549

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24526-1f

<400> 549

tgaaatggca gagaatggaa

20

<210> 550

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24526-1r

<400> 550

tccagagaaa aatactgcaa gg

22

<210> 551

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21212-1f

<400> 551

ctggggattt tcgttggtg

19

<210> 552

<211> 21

<212> DNA



<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21212-1r

<400> 552

tgtttctggg ctgtttatcc t

21

<210> 553

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20604-1f

<400> 553

atcgtcttca gatggagctt g

21

<210> 554

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20604-1r

<400> 554

atgtgacccg acgttgatg

19

<210> 555

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21226-1f

<400> 555

gcctcagtgg atggtaaag

20

<210> 556

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21226-1r

<400> 556

ccaagaagca gaaaagcaag

20

<210> 557

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21928-1f

<400> 557

ctcaggtttt ctgcatagtt

20

<210> 558

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21928-1r

<400> 558

tgatagtttc caaggttaagg

20

<210> 559

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22643-1f

<400> 559

ctggtttata ttggatgaga gtgg

24

<210> 560

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22643-1r

<400> 560

agatgaaatg gaagtcaca ag

22

<210> 561

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23649-1f

<400> 561

tgtatccagt tgccaaggt

20

<210> 562

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23649-1r

<400> 562

cacagcagaa gccaaagaaa g

21

<210> 563

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24468-1f

<400> 563

cgacacaggt tctgcttcct

20

<210> 564

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24468-1r

<400> 564

gccttctctc ctccatcctt

20

<210> 565

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20874r1-1f

<400> 565

accagctct tatcccttaa tct

23

<210> 566

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20874r1-1r

<400> 566

gccttcacaa caaagttctc c

21

<210> 567

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20134-1f

<400> 567

gtaactaggg ggccacattc

20

<210> 568

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20134-1r

<400> 568

gacaacacgt ctgcaccttc

20

<210> 569

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20181-1f

<400> 569

cgtgtaaaga aacccaaagg ag

22

<210> 570

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20181-1r

<400> 570

tctaccacgc ggagtttgag

20

<210> 571

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20276-1f

<400> 571

ctatctccca ggattttgct ct

22

<210> 572

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20276-1r

<400> 572

ccaggaagct ggaacctct

19

<210> 573

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20709-1f

<400> 573

gattagtgg gacctgcctt g

21

<210> 574

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20709-1r

<400> 574

caatgctttt tcggaggaga

20

<210> 575

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20782-1f

<400> 575

caaagatggg aacaaccagt atc

23

<210> 576

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20782-1r

<400> 576

actgtctatg aagtaaggca agca

24

<210> 577

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20788-1f

<400> 577

ctggactcag gagaggagac a

21

<210> 578

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20788-1r

<400> 578

gaaagccacc caaaccaag

19

<210> 579

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21046-1f

<400> 579

tcttggaggt gtgcagagat g

21

<210> 580

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21046-1r

<400> 580

tctgtttcgg gctggtagtg

20

<210> 581

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21122-1f

<400> 581

ctagaagctc catattccct cttc

24

<210> 582

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21122-1r

<400> 582



ggttaagaac gtgatgcctg t

21

<210> 583

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21211r1-1f

<400> 583

cttcagctcc tttcccaatc

20

<210> 584

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21211r1-1f

<400> 584

accatgtctt gtggtggtgt

20

<210> 585

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21233d-1f

<400> 585

atggggaatg gtctgcttc

19

<210> 586

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21233d-1r

<400> 586

ctccctcttc caaggatgtc t

21

<210> 587

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21375-1f

<400> 587

ctttgccatc ctgaaagaga g

21

<210> 588

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21375-1r

<400> 588

gtagcagacg atgtggtgga

20

<210> 589

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21524-1f

<400> 589

cctcgaaaga tccctgattg

20

<210> 590

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21524-lr

<400> 590

tcccagctcc agaacttacc t

21

<210> 591

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21843-1f

<400> 591

ccatattggg agacaccatc

20

<210> 592

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21843-lr

<400> 592

atcctgaccc tgcacctt

18

<210> 593

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21934-1f

<400> 593

gattttcagg tgggagattt g

21

<210> 594

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21934-1r

<400> 594

tctgttttgt gccttttttg

20

<210> 595

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22153-1f

<400> 595

gctgctgaag aaatagtgga ttg

23

<210> 596

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22153-1r

<400> 596

acgatagggtg gcattgaggt

20

<210> 597

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22382-1f

<400> 597

gtgcctgtga tattgagttt aagga

25

<210> 598

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22382-lr

<400> 598

tagtgagat gggactacaa aagg

24

<210> 599

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22571-lf

<400> 599

gtcatagtgc ccaccaca

18

<210> 600

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22571-lr

<400> 600

ttgcacagga gaaatgga

18

<210> 601

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22789-lf

<400> 601

gctaagggga tgaagcaaac

20

<210> 602

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22789-lr

<400> 602

agcagagcca ctccacaga

19

<210> 603

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23060-1f

<400> 603

catgcgggag agagaatgag

20

<210> 604

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23060-lr

<400> 604

tcacctttag gcaatgaaga gg

22

<210> 605

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23218-1f

&lt;400&gt; 605

ccttgactct ctctcccctt c

21

&lt;210&gt; 606

&lt;211&gt; 18

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23218-lr

&lt;400&gt; 606

gacacggttc tgcctgct

18

&lt;210&gt; 607

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23545-1f

&lt;400&gt; 607

cattcactcc tttggcctct

20

&lt;210&gt; 608

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23545-lr

&lt;400&gt; 608

agcctcatgt tcgcatttct

20

&lt;210&gt; 609

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla23653-1f

<400> 609

acccaaagct agggaatcaa c

21

<210> 610

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23653-1r

<400> 610

tcagaaacac ggccaaaac

19

<210> 611

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23666-1f

<400> 611

cgtggtggtg tgtattttgg

20

<210> 612

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23666-1r

<400> 612

gtatcgcggt gacataaaag g

21

<210> 613

<211> 20

<212> DNA

<213> Artificial Sequence



<220>

<223> Synthetic Primer: nbla23760-1f

<400> 613

attgaggcga aagtcaaacc

20

<210> 614

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23760-1r

<400> 614

acaggactga aagaaccagc a

21

<210> 615

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23830-1f

<400> 615

tatagtgcgc ggagggacag a

21

<210> 616

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23830-1r

<400> 616

cggatggaag tcatggaag

19

<210> 617

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23942-1f

<400> 617

cgaagaagag ccagaatgag a

21

<210> 618

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23942-1r

<400> 618

tggggaaaga tttgtgagg

20

<210> 619

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24131-1f

<400> 619

ggcacataac cagtttcaa g

21

<210> 620

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24131-1r

<400> 620

gccaccaaaa ttagcaaaa g

21

<210> 621  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla24908-1f

<400> 621  
acaaggccat cctgcaac 18

<210> 622  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla24908-1r

<400> 622  
ctgatctggt tctccgtcct 20

<210> 623  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla20125-1f

<400> 623  
tctcccttcg ccttcttcta c 21

<210> 624  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla20125-1r

<400> 624  
actggttcg atgtgttgct 20

<210> 625

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20231d-1f

<400> 625

tagggtgctg gatggtagag

20

<210> 626

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20231-lr

<400> 626

catcaacttc tgcaaggaca

20

<210> 627

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20268-1f

<400> 627

atcaggacag atggggaaca

20

<210> 628

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20268-lr

&lt;400&gt; 628

tcagagagaa ggatttggat gag

23

&lt;210&gt; 629

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20395-lf

&lt;400&gt; 629

tttcctgagt gtgtgagatg aa

22

&lt;210&gt; 630

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20395-lr

&lt;400&gt; 630

taggccaggg acagaaatg

19

&lt;210&gt; 631

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23973-lf

&lt;400&gt; 631

agaaaagaaa cggcaacgag

20

&lt;210&gt; 632

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla23973-lr

<400> 632

ggtgggtgag aagatgatgg

20

<210> 633

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24041-lf

<400> 633

cagtaaaggc aagggaagag g

21

<210> 634

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24041-lr

<400> 634

cttgggaaac aaaagtccag ag

22

<210> 635

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24082-lf

<400> 635

cgcaatactc atttgctgtg

20

<210> 636

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24082-1r

<400> 636

tgtagacttc tggtacaat ctgg

24

<210> 637

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24239-1f

<400> 637

gaaggaattg agagcacagc a

21

<210> 638

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24239-1r

<400> 638

atccctgcat caccacctc

19

<210> 639

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20638-1f

<400> 639

gtctgtcaac aaatacacca aaacc

25

<210> 640

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20638-lr

<400> 640

ttatccaact ccccaaagca

20

<210> 641

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20765-lf

<400> 641

tgaaagcgtc tgttgttacc c

21

<210> 642

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20765-lr

<400> 642

tgtcggaact catctacctc aac

23

<210> 643

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20789-lf

<400> 643

tgtcctgctt, cttgtttgtg g

21



<210> 644

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20789-1r

<400> 644

ggcgctcctt gtgtagtga

20

<210> 645

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20792-1f

<400> 645

ctttgtaccc ctgcctaata c

21

<210> 646

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20792-1r

<400> 646

aatacccaac ccacccttgt

20

<210> 647

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20798-1f

<400> 647

gctgcctcag aacatttg

19

<210> 648

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20798-1r

<400> 648

ggccctccac cataaataga

20

<210> 649

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21024-1f

<400> 649

tgccacatac atggaacacc

20

<210> 650

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21024-1r

<400> 650

catgctacac gggacctact c

21

<210> 651

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24363-1f

<400> 651

caaatggttg ctggtctcct

20

<210> 652

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24363-1r

<400> 652

cttcctcct ctgctacct ct

22

<210> 653

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24622-1f

<400> 653

tgccagggaa cagagagtg

19

<210> 654

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24622-1r

<400> 654

tgtaaaaggg acctgagagg ag

22

<210> 655

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24646-1f

<400> 655

tgcaggcgta caactaaca

20

<210> 656

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24646-1r

<400> 656

tggtctgcga gaaatcaaac

20

<210> 657

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24672-1f

<400> 657

ccagcctctg tggtctttgt

20

<210> 658

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24672-1r

<400> 658

cacctaacgc cacgtcttc

19

<210> 659

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21077-1f

<400> 659

tgaaggatgt accccagaga g

21

<210> 660

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21077-1r

<400> 660

gataaggcca cagcaaaagg

20

<210> 661

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21089-1f

<400> 661

cacgctcaag ttcattagca ca

22

<210> 662

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21089-1r

<400> 662

tgtccaatca ccgcagtttc

20

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21130-lf

<400> 663

agcttgacct ctccagaaca c

21

<210> 664

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21130-lr

<400> 664

ggttgtctct ttaattgtcc cttc

24

<210> 665

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21266-lf

<400> 665

gacagagtgc tcagattggt gg

22

<210> 666

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21266-lr

<400> 666

cctagaggaa ggtgggctgt

20

<210> 667

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24709-1f

<400> 667

cagcctccca actcattttc

20

<210> 668

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24709-1r

<400> 668

tgggctcctt ctgcaatc

18

<210> 669

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24748-1f

<400> 669

cggtttgccc tgtttttatg

20

<210> 670

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24748-1r

<400> 670

gctcaactac tatcttggga tctcttt

27

<210> 671

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24831-1f

<400> 671

gcagtttctt catcaaaggt gt

22

<210> 672

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24831-1r

<400> 672

tctatcccat gtgttgtgtt tg

22

<210> 673

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24972-1f

<400> 673

ggtatittca accaccagga ac

22

<210> 674

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24972-1r



&lt;400&gt; 674

aggatagcac cattcatcac ct

22

&lt;210&gt; 675

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21413-1f

&lt;400&gt; 675

tgctggggag tatgaagaca

20

&lt;210&gt; 676

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21413-1r

&lt;400&gt; 676

ctttatttgc agccattcca c

21

&lt;210&gt; 677

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21520-1f

&lt;400&gt; 677

tggaacctac gtctttccct ac

22

&lt;210&gt; 678

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

<220>

<223> Synthetic Primer: nbla21520-lr

<400> 678

acagctcatg tctgcctcct

20

<210> 679

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21936-lf

<400> 679

ccacaggaag ctatcaaaga aaag

24

<210> 680

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21936-lr

<400> 680

tacactggtg gagaggaaca ga

22

<210> 681

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22028-lf

<400> 681

tgtagggacc agaacacgag a

21

<210> 682

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22028-1r

<400> 682

cagaagcaga gacccttcca

20

<210> 683

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22093-1d-1f

<400> 683

agacactatc acgagaccca ga

22

<210> 684

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22093-1d-1r

<400> 684

agacactatc acgagaccca ga

22

<210> 685

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22218-1f

<400> 685

ggctcaggaa gagaagaaga tg

22

<210> 686

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22218-1r

<400> 686

atccaaaagg ggccatagag.

20

<210> 687

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22451-1f

<400> 687

tcctcaataa taagcctgtg tcc

23

<210> 688

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22451-1r

<400> 688

tccctgtgtt tgcttttcac

20

<210> 689

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22455d-1f

<400> 689

caatggtgga aaccagtaag g

21

<210> 690

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22455d-1r

<400> 690

agtttgggga acagtgaag

20

<210> 691

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22464-1f

<400> 691

ggacaaggca gagtgatg

20

<210> 692

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22464-1r

<400> 692

cgtgtaagga cggtgattgg

20

<210> 693

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22465-1f

<400> 693

gtcactttgc ttttgctcgt ct

22

<210> 694

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22465-lr

<400> 694

tggaacttg aaccaccatc

20

<210> 695

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22487-lf

<400> 695

aacgcctcgt cctgctct

18

<210> 696

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22487-lr

<400> 696

ccggtgggct aaaatggt

18

<210> 697

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22669-1f

<400> 697

ccgaggaaga agagcaagg

19

<210> 698

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22669-1r

<400> 698

ccaagcagat ggcacaca

18

<210> 699

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22726-1f

<400> 699

gcccagcaac aagacagag

19

<210> 700

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22726-1r

<400> 700

ctgcaaaatg ggagactgg

19

<210> 701

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22886-1f

<400> 701

gcacagggaa ccatcagaac

20

<210> 702

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22886-1r

<400> 702

caccaccaac gtcattcctc

20

<210> 703

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23012-1f

<400> 703

aggagaaaca ggagcgagag

20

<210> 704

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23012-1r

<400> 704

ttgctgagat gcgtggag

18

<210> 705

<211> 20



<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23038-1f

<400> 705

gaaacctcag catggagaca

20

<210> 706

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23038-1r

<400> 706

ccaatcactc actcacaaa gag

23

<210> 707

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23718-1f

<400> 707

atggaaaact tgcctgctct

20

<210> 708

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23718-1r

<400> 708

tcaccacac tttatctcca ac

22

<210> 709

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23719-1f

<400> 709

ctgaacagaa aagcacaacc tc

22

<210> 710

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23719-1r

<400> 710

acaggcgggt caaatctatc

20

<210> 711

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23951-1f

<400> 711

cctgctgttc tggttccttg

20

<210> 712

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23951-1r

<400> 712

agcctgggtc tttcatctgg

20

<210> 713

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21855-1f

<400> 713

atgaaggggg aaggggttct

20

<210> 714

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21855-1r

<400> 714

gaacatgggtg ctcctttgtg g

21

<210> 715

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22704-1f

<400> 715

tcacaaatca gcaggcaca

19

<210> 716

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22704-1r

&lt;400&gt; 716

tgctaccaac ccctctacat c

21

&lt;210&gt; 717

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23394-lf

&lt;400&gt; 717

ttcctgagag actgggagtt g

21

&lt;210&gt; 718

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23394-lr

&lt;400&gt; 718

atagctgagg gagccgttg

19

&lt;210&gt; 719

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23512-lf

&lt;400&gt; 719

actgtccac cacaactgaa c

21

&lt;210&gt; 720

&lt;211&gt; 23

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla23512-1r

<400> 720

ctcataatct cgtctttgca cct

23

<210> 721

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24084-1f

<400> 721

ttagcagaga catgcaacaa ca

22

<210> 722

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24084-1r

<400> 722

cgtgatccaa cagaagattg ag

22

<210> 723

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24376-1f

<400> 723

aacaagccta gaggaatgaa c

21

<210> 724

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24376-1r

<400> 724

tacaagaagc gcaacacc

18

<210> 725

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21761-1f

<400> 725

cttcgccaga caaaaccatc

20

<210> 726

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21761-1r

<400> 726

gatctccccc ttcttctcct c

21

<210> 727

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23456-1f

<400> 727

ccattgcttt agtcgttgct

20

<210> 728

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23456-1r

<400> 728

aattagctcc tctcgctgt

20

<210> 729

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24297-1f

<400> 729

acaaccattc cctaactcca tc

22

<210> 730

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24297-1r

<400> 730

ctgttactgt tgctgcttcc a

21

<210> 731

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24719-1f

<400> 731

tcgttacacc gctttgtcc

19

<210> 732

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24719-1r

<400> 732

ggcttggaac acacacacac

20

<210> 733

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20113-1f

<400> 733

gcccaaagggt tatttccaag

20

<210> 734

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20113-1r

<400> 734

cacaaggggt ggactgatg

19

<210> 735

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20253r1-1f



<400> 735

accagggata agggggaac

19

<210> 736

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20253r1-lr

<400> 736

tgctttgccc acactaaaga

20

<210> 737

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20549-1f

<400> 737

gtgcttgtct gatgggatg

19

<210> 738

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20549-lr

<400> 738

caatgaagac gctcacagg

19

<210> 739

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20835-1f

<400> 739

aaggtgacag cataggtgga g

21

<210> 740

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20835-1r

<400> 740

tgatagggat tcttgctaac tgg

23

<210> 741

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20968-1f

<400> 741

agcctggtgg ctcacatc

18

<210> 742

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20968-1r

<400> 742

gacacttgcc tcaatagggt tc

22

<210> 743

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21087-1f

<400> 743

gtgtctctcc tagtgattga ttttg

25

<210> 744

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21087-1r

<400> 744

taaaaggggt tggtctcttg ct

22

<210> 745

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21189-1f

<400> 745

catcctacag gtggaagca

19

<210> 746

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21189-1r

<400> 746

agttcttggg tgtggtgaag

20

<210> 747

<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21214-1f

<400> 747

aggggtaagt cagggaagga

20

<210> 748

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21214-1r

<400> 748

cctaccaggc aaagtccaag

20

<210> 749

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21337-1f

<400> 749

atttcagccg catctcacac

20

<210> 750

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21337-1r

<400> 750

gcttcgccaa cactcattac a

21

<210> 751  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla21344r1-1f

<400> 751  
ccattttgct gattttctct gg 22

<210> 752  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla21344r1-1r

<400> 752  
attcttcccc ctccctctgt 20

<210> 753  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla21956-2-1f

<400> 753  
ggacttgggg ctctcctct 19

<210> 754  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla21956-2-1r

&lt;400&gt; 754

gctagggcac ctgatttg

20

&lt;210&gt; 755

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla22228-1f

&lt;400&gt; 755

gtatgttgga gcagcgaaag

20

&lt;210&gt; 756

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla22228-1r

&lt;400&gt; 756

gtccccaag aagagttcca

20

&lt;210&gt; 757

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla22351-1f

&lt;400&gt; 757

ggtgagttag ctttgaggtg tg

22

&lt;210&gt; 758

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla22351-lr

<400> 758

ggccagacga gtggaaatag

20

<210> 759

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22361-lf

<400> 759

ccctacggat caagggtac

20

<210> 760

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22361-lr

<400> 760

ctgtctcagg ggctccaac

19

<210> 761

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22474-lf

<400> 761

gaagatgctg ccctaattcc

20

<210> 762

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22474-1r

<400> 762

ccacattcct tttctttgtc c

21

<210> 763

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22939-1f

<400> 763

ggacagcagc aactcaaaaa g

21

<210> 764

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22939-1r

<400> 764

tatctatccc catgcctcca

20

<210> 765

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23775-1f

<400> 765

tgagcaatac cctgcctaca

20

<210> 766

<211> 22



<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23775-lr

<400> 766

gtccccagtg ctaatcctac tc

22

<210> 767

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24182-lf

<400> 767

ctgacgggag aggaggaa

18

<210> 768

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24182-lr

<400> 768

gaaaaggcac cgaacagaac

20

<210> 769

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24285-lf

<400> 769

tcagacggtg aggatgatgt

20

<210> 770

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24285-1r

<400> 770

cgctgtcctt ttgcctgt

18

<210> 771

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24434-1f

<400> 771

cagaggctga gaatggtgtg

20

<210> 772

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24434-1r

<400> 772

gccttgact ggctggaaga

20

<210> 773

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24460d-1f

<400> 773

tctctgaaaa gtgccagtcc a

21

<210> 774

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24460d-lr

<400> 774

tcatgccctg ccttagaaac

20

<210> 775

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24762-lf

<400> 775

agctactctg aagacctccc tatgt

25

<210> 776

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24762-lr

<400> 776

tgcattccaca cgttctcttg

20

<210> 777

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24893-lf

&lt;400&gt; 777

agatggattt ttgccccttc

20

&lt;210&gt; 778

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24893-1r

&lt;400&gt; 778

tacaggtaga aacaagccca ca

22

&lt;210&gt; 779

&lt;211&gt; 18

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24973-1f

&lt;400&gt; 779

tccctggagg caaacaca

18

&lt;210&gt; 780

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24973-1r

&lt;400&gt; 780

atgtgacgca gtggcctatc

20

&lt;210&gt; 781

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

<220>

<223> Synthetic Primer: nbla24986-1-lf

<400> 781

atggaacacc acagccaga

19

<210> 782

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24986-1-lr

<400> 782

ccagagtcag cccattaaac a

21

<210> 783

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23020-1f

<400> 783

tcaggatgag gaaatgacag g

21

<210> 784

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23020-1r

<400> 784

agtcacgctg ggaggaaag

19

<210> 785

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20087d-1f(k)

<400> 785

ccagctctcc agttttcagg

20

<210> 786

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20087d-1r

<400> 786

gttcccttc gtagttgag g

21

<210> 787

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21750d-1f(k)

<400> 787

gatgaattgc ctccattgtc tc

22

<210> 788

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21750d-1r

<400> 788

ggttgctgc ttctggatgt

20

<210> 789

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22129-1f(k)

<400> 789

cagatgggga gtgttctgat g

21

<210> 790

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22129-1r

<400> 790

tctagggggt ggtaaagatg g

21

<210> 791

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22808-1f(k)

<400> 791

ggaccaagat atggttttgg ag

22

<210> 792

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22808-1r

<400> 792

gcatgtattt gcctcccttg

20

<210> 793

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23064-1f(k)

<400> 793

catgaaccct tccctatgtc c

21

<210> 794

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23064-1r

<400> 794

tctttgcatc catcgcatc

19

<210> 795

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23358d-1f(k)

<400> 795

gctctcccaa atcgctac

19

<210> 796

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23358-d-1r



&lt;400&gt; 796

cctcatcatc cccttcac

19

&lt;210&gt; 797

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla22443-1f(k)

&lt;400&gt; 797

atccttggtg gccttgatg

20

&lt;210&gt; 798

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla22443-1r

&lt;400&gt; 798

tcagagtgat tgctggcttg

20

&lt;210&gt; 799

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20235-1f(k)

&lt;400&gt; 799

tccttacacg ggccataaat ac

22

&lt;210&gt; 800

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla20235-1r

<400> 800

accgtctcaa atcgaaccac

20

<210> 801

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22607-1f(k)

<400> 801

acacatgcct agcagacca

19

<210> 802

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22607-1r

<400> 802

tgcacttcat ttagacttca cc

22

<210> 803

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22305-1f(k)

<400> 803

gcagttccaa tgaaggaca

19

<210> 804

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22305-1r

<400> 804

tcatctgctt ggtgtatgaa ag

22

<210> 805

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22031-1f(k)

<400> 805

tccctctgta ttttgggttg g

21

<210> 806

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22031-1r

<400> 806

ggtggatgtt ccttgagtgg

20

<210> 807

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23478d-1f(k)

<400> 807

agcacaacag caaggacaga

20

<210> 808

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23478d-1r

<400> 808

cgttaccaaa cagcccaga

19

<210> 809

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23896-1f(k)

<400> 809

tcccattaca ggctctttcc

20

<210> 810

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23896-1r

<400> 810

gctccttcca agatttatcc ac

22

<210> 811

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24920-1f(k)

<400> 811

gcaactccat ccaccgtct

19

<210> 812

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24920-1r

<400> 812

ccgtttcttg gctctcttg

19

<210> 813

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20141-1f(k)

<400> 813

ctgtgttacc ctgttttct acct

24

<210> 814

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20141-1r

<400> 814

cgggctatgt atctaagggtt ttc

23

<210> 815

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20446-1f(k)

&lt;400&gt; 815

tagccctctt tggctcctcct

20

&lt;210&gt; 816

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20446-lr

&lt;400&gt; 816

ttacagtcac gttgccagtt cc

22

&lt;210&gt; 817

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21538-1f(k)

&lt;400&gt; 817

ggagagaagt ttgaagaaac ca

22

&lt;210&gt; 818

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21538-lr

&lt;400&gt; 818

tccaccacta atttcccatc

20

&lt;210&gt; 819

&lt;211&gt; 18

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla22558-1f(k)

<400> 819

cgggccacca gtttctct

18

<210> 820

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22558-1r

<400> 820

tcgataactcg gcctcgaac

19

<210> 821

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21623-1f(k)

<400> 821

ggaagaaaag ttccgaggtg

20

<210> 822

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21623-1r

<400> 822

ttgacagtgc tgcttggtg

19

<210> 823

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21969-1f(k)

<400> 823

caaaagcgtc ctgctctaca c

21

<210> 824

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21969-1r

<400> 824

acgagactga ccaccaga

19

<210> 825

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22219-1f(k)

<400> 825

tgtggttcat agtgaggtgg a

21

<210> 826

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22219-1r

<400> 826

gagcaagttt tggctttgtg

20

<210> 827



<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23272-1f(k)

<400> 827

ctagggacag gaagatggtt g

21

<210> 828

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23272-1r

<400> 828

gatacaggtc atgggcagag

20

<210> 829

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23307-1-1f(k)

<400> 829

atccctcaga acccatgct

19

<210> 830

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23307-1-1r

<400> 830

cgctcaactt ccacttctcc

20

<210> 831  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla24117-1f(k)

<400> 831  
gtcctgaagg cagaggaag 20

<210> 832  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla24117-1r

<400> 832  
cagggttggg gtaagagagg 20

<210> 833  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla23262-1f(k)

<400> 833  
ggacaagagc caggaagaa 19

<210> 834  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Primer: nbla23262-1r

&lt;400&gt; 834

ggtggaaagg tttggagtat g

21

&lt;210&gt; 835

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20133d-1f(k)

&lt;400&gt; 835

gctacgtgga agtgaatgga g

21

&lt;210&gt; 836

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20133d-1r

&lt;400&gt; 836

ccagaaacag accccaagag

20

&lt;210&gt; 837

&lt;211&gt; 18

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20263r1-1f(k)

&lt;400&gt; 837

tgggggaaaa gttcttgg

18

&lt;210&gt; 838

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla20263r1-1r

<400> 838

gcctgtcctg tagctggtt

19

<210> 839

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20723-1f(k)

<400> 839

agatgccaaa cgcagaac

18

<210> 840

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20723-1r

<400> 840

ttgaagcaaa cactcaccaa

20

<210> 841

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20748-1f(k)

<400> 841

catccatctc acagcaccac

20

<210> 842

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20748-1r

<400> 842

tctcacgcag caactcaatc

20

<210> 843

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20915-1f(k)

<400> 843

ggatcagaga gggctacctt g

21

<210> 844

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20915-1r

<400> 844

cctgctgttt ggtcgtagt

20

<210> 845

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21016-1f(k)

<400> 845

agtttactct tgcccactcc a

21

<210> 846

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21016-1r

<400> 846

ctggattttt gccctgtctc

20

<210> 847

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21034r1-1f(k)

<400> 847

caatcaccag ttgctgtcct

20

<210> 848

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21034r1-1r

<400> 848

atttcccagt ctcccctatg t

21

<210> 849

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21067-1f(k)

<400> 849

tgagaagagg agtgcaagga

20

<210> 850

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21067-1r

<400> 850

tgcatggatt tgggtttg

18

<210> 851

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21167-1f(k)

<400> 851

ttcttctctg tccccaaca

20

<210> 852

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21167-1r

<400> 852

gagctgtcaa tacaacactg ga

22

<210> 853

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21319-1f(k)

<400> 853

ttggggttca tcctccttc

19

<210> 854

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21319-1r

<400> 854

gttgaggtcg ttctccgtgt

20

<210> 855

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21331-1f(k)

<400> 855

tggcaggttt tcttctactt gtg

23

<210> 856

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21331-1r

<400> 856

tcccagctaa catggttgat tt

22

<210> 857

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21516-1f(k)



&lt;400&gt; 857

gcaggaagcg atggtaaga

20

&lt;210&gt; 858

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21516-1r

&lt;400&gt; 858

gcccaagtag gaatctgtgt g

21

&lt;210&gt; 859

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21682d-1f(k)

&lt;400&gt; 859

aatctacgct tcccaaacca

20

&lt;210&gt; 860

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21682-1r

&lt;400&gt; 860

taggcactgg gcaatgatac

20

&lt;210&gt; 861

&lt;211&gt; 18

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla21691-1f(k)

<400> 861

gcaggtgaat gccttggt

18

<210> 862

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21691-1r

<400> 862

gcacgaattg cttggagag

19

<210> 863

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21822-1f(k)

<400> 863

gcagaggatg gaaagttgat g

21

<210> 864

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21822-1r

<400> 864

gtggcagcac aaagaaaaga

20

<210> 865

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21976-2-1f(k)

<400> 865

agtgctgggc ctaaaggag

19

<210> 866

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21976-2-1r

<400> 866

gactccctga ctgttgatgt tg

22

<210> 867

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21977-1f(k)

<400> 867

gcctaccatt tcacagaggt tt

22

<210> 868

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21977-1r

<400> 868

tgtttttata tgctgccctt cc

22

<210> 869

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22159-1f(k)

<400> 869

tggcacatca gaaaggaatg

20

<210> 870

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22159-1r

<400> 870

aatgggagcc aaggaaagag

20

<210> 871

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22168-1f(k)

<400> 871

tactgggtcg ggtgtttgtg

20

<210> 872

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22168-1r

<400> 872

ccgatggtgc tcttgctct

19

<210> 873

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22215-1-1f(k)

<400> 873

gccctctcct gacttgtatt g

21

<210> 874

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22215-1-1r

<400> 874

cctgaagttt gctgttttgt g

21

<210> 875

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22244-1f(k)

<400> 875

agagaatcgg aagtggatga ga

22

<210> 876

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22244-1r

<400> 876

atgcttgctg ctttgcttg

19

<210> 877

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22263-1f(k)

<400> 877

aagattggaa gacccgttg

20

<210> 878

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22263-1r

<400> 878

acagcttttg gggtgatttg

20

<210> 879

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22548-1f(k)

<400> 879

atcccaacca cctcccttg

19

<210> 880

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22548-1r

<400> 880

ctgctgtccc cactcctctt

20

<210> 881

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23033-1f(k)

<400> 881

tctagtgggtg gcagggaaga

20

<210> 882

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23033-1r

<400> 882

agcatggagg aaacagacag a

21

<210> 883

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23231-1f(k)

<400> 883

aggctctccc tcagttacca

20

<210> 884

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23231-lr

<400> 884

caaaaccgtc ccgaagag

18

<210> 885

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23284-1f(k)

<400> 885

gtgatgctgt cttgaattgt cc

22

<210> 886

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23284-lr

<400> 886

cttatggacc cgccttttct

20

<210> 887

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23329-1d-1f(k)

<400> 887

gcatggacag ttgtttggag

20



<210> 888

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23329-1d-1r

<400> 888

ggaagaaccg gaggacttg

19

<210> 889

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23384-1f(k)

<400> 889

ttagccagcg cacctttac

19

<210> 890

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23384-1r

<400> 890

taccaccac atctccttcc

20

<210> 891

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23556-1f(k)

<400> 891

ggaagtcctt tccacctctc

20

<210> 892

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23556-1r

<400> 892

agtcctatgc acgactccaa

20

<210> 893

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23674r1-1f(k)

<400> 893

tggtcttctt ggccttgct

19

<210> 894

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23674r1-1r

<400> 894

ctgcacctc atcctcctct

20

<210> 895

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23879-2-1f(k)

&lt;400&gt; 895

cattctgttt gatcttcggt ctc

23

&lt;210&gt; 896

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23879-2-1r

&lt;400&gt; 896

agctgtagca gtggatgctt t

21

&lt;210&gt; 897

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24098r1-1f(k)

&lt;400&gt; 897

tagggcttca tgtgggaaac

20

&lt;210&gt; 898

&lt;211&gt; 18

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24098r1-1r

&lt;400&gt; 898

agccgcgaaa ctgagaac

18

&lt;210&gt; 899

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla24329-1f(k)

<400> 899

aggtggaggc tgatgacttg

20

<210> 900

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24329-1r

<400> 900

tctctgaata gtgccccgta g

21

<210> 901

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24334-1f(k)

<400> 901

tgggtaaagg acgaggaaga

20

<210> 902

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24334-1r

<400> 902

caggccatct atcaaccaca c

21

<210> 903

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24439-1-1f(k)

<400> 903

ggcgggtgcag atccagtt

18

<210> 904

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24439-1r

<400> 904

gtcacggtgc cgtccttg

18

<210> 905

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24507-1f(k)

<400> 905

aaccgcgatg gaattatctg t

21

<210> 906

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24507-1r

<400> 906

ctttggtgaa gggcatggt

19

<210> 907

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24836-1f(k)

<400> 907

cacgttgaca ggtttgcttg

20

<210> 908

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24836-1r

<400> 908

ccttgctctg ttgacattcc t

21

<210> 909

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24958-1f(k)

<400> 909

tggagcagtt ggctaaagag

20

<210> 910

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24958-1r

<400> 910

agtgatggta ctggatgtct gg

22

<210> 911

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24989-1f(k)

<400> 911

tggaaatcta tcgccctcac

20

<210> 912

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24989-1r

<400> 912

acagaactca aacaggccat c

21

<210> 913

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20393d-1f(k)

<400> 913

agtcagaaa accgacgaag

20

<210> 914

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20393d-1r

<400> 914

ggtcaggcca ttgaagagag

20

<210> 915

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20423d-1f(k)

<400> 915

tggtctatca ccccagcttc

20

<210> 916

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20423d-1r

<400> 916

gttcttcacc ttctccaaca cc

22

<210> 917

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20510-1f(k)

<400> 917

gttcactggg gctcattcca

20

<210> 918

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20510-1r



&lt;400&gt; 918

tgatctcctc cctcttatcc ac

22

&lt;210&gt; 919

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20833d-1f(k)

&lt;400&gt; 919

gctaatacaaa gcggcaaca

19

&lt;210&gt; 920

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20833d-1r

&lt;400&gt; 920

tccatcagtc tcttcccata cc

22

&lt;210&gt; 921

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20931-1f(k)

&lt;400&gt; 921

tagcagggaa gccaaagatg

20

&lt;210&gt; 922

&lt;211&gt; 23

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

<220>

<223> Synthetic Primer: nbla20931-1r

<400> 922

cagtacacag gctccagaag aag

23

<210> 923

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20943-1f(k)

<400> 923

tctaggetgc ttggttcgtg

20

<210> 924

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20943-1r

<400> 924

gatcttcctg tggggcttg

19

<210> 925

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21258r1-1f(k)

<400> 925

ttaaggcggg tctctgttc

19

<210> 926

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21258-lr

<400> 926

tggaacctc aaggaaaact c

21

<210> 927

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21268-1f(k)

<400> 927

cctagagggc agatgcaga

19

<210> 928

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21268-lr

<400> 928

gcctgagagg gaaaccac

18

<210> 929

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21273-1f(k)

<400> 929

agagccttcc tcacccaaac

20

<210> 930

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21273-1r

<400> 930

agctccttca cctcctcaca

20

<210> 931

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21412-1f(k)

<400> 931

ttgaacagga gaagcaagca

20

<210> 932

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21412-1r

<400> 932

cggccttcgt tgtcagtag

19

<210> 933

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21578-1f(k)

<400> 933

ctctcctgt tgctgacct

20

<210> 934

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21578-1r

<400> 934

tggtgtcagt gctgttcctc

20

<210> 935

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21614-1f(k)

<400> 935

tggtatgagc caatgcaga

19

<210> 936

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21614-1r

<400> 936

ctgtaaacca tgaagatgca ga

22

<210> 937

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21624-1f(k)

&lt;400&gt; 937

tggaacata cgatgatgga g

21

&lt;210&gt; 938

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21624-lr

&lt;400&gt; 938

agtcttgctt ctgggggatg

20

&lt;210&gt; 939

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21655-1f(k)

&lt;400&gt; 939

tgtcattgtg ctggctgtg

19

&lt;210&gt; 940

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21655-lr

&lt;400&gt; 940

acctccacct tccctgttgt

20

&lt;210&gt; 941

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla21670-1f(k)

<400> 941

gtctttgaac gccattaccc

20

<210> 942

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21670-1r

<400> 942

ttgttcccct atctaccac a

21

<210> 943

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21787-1f(k)

<400> 943

agccctctca ctatatgcta tcc

23

<210> 944

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21787-1r

<400> 944

gggtgtatat ttcctttgtg tcc

23

<210> 945

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21954-1f(k)

<400> 945

ccagcttcct acaacacccat ct

22

<210> 946

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21954-1r

<400> 946

tacaagccaa cgctttctcc

20

<210> 947

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21979-1f(k)

<400> 947

catgtagtgg gttcggagat g

21

<210> 948

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21979-1r

<400> 948

cgtagccatc agtgcaagag

20

<210> 949

<211> 19



<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22043-1f(k)

<400> 949

ggcccagaac aactgctac

19

<210> 950

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22043-1r

<400> 950

aggccaccct ccttcttc

18

<210> 951

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22137r1-1f(k)

<400> 951

aggcattaag ggcacacc

18

<210> 952

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22137r1-1r

<400> 952

ctgcaagtaa ataggcccag a

21

<210> 953

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22192-1f(k)

<400> 953

cgttatggtg gtcattgttg

20

<210> 954

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22192-1r

<400> 954

tgctttcttc ctgctgttct

20

<210> 955

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22325d-1f(k)

<400> 955

ccattgtact gccgtctct

20

<210> 956

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22325d-1r

<400> 956

gtccctt tccatcacc

19

<210> 957

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22327-1f(k)

<400> 957

tgtttgcttc ttgccatcac

20

<210> 958

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22327-1r

<400> 958

tgcctcttta tcacctacca ca

22

<210> 959

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22337-1f(k)

<400> 959

ggctgttctt accatctcct t

21

<210> 960

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22337-1r

<400> 960

agctcctgct aaattctaac ctc

23

<210> 961

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22482-1f(k)

<400> 961

gctgcgtctc atacaaacca

20

<210> 962

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22482-1r

<400> 962

catccacagc aactttcaca tc

22

<210> 963

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22763-1f(k)

<400> 963

cagcacagca actcaggaac

20

<210> 964

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22763-1r

<400> 964

tggcaaactt gaggcaga

18

<210> 965

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22788-1f(k)

<400> 965

ctggatcagg tttcccaca

19

<210> 966

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22788-1r

<400> 966

aggcagctca aatccttcac

20

<210> 967

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22839-1f(k)

<400> 967

tgtcatcacg cttcccttc

19

<210> 968

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22839-1r

<400> 968

gagccaaca tagaccacct

20

<210> 969

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22851-1f(k)

<400> 969

atgcctctgc ctcattcac

20

<210> 970

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22851-1r

<400> 970

gctctgcctg ctgactctct

20

<210> 971

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22935-1f(k)

<400> 971

tgactaacgc tcacataact gg

22

<210> 972

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22935-1r

<400> 972

tgcttacctt cttgcttaat gg

22

<210> 973

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22937-1f(k)

<400> 973

gcagtttgag ggtgttttgg

20

<210> 974

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22937-1r

<400> 974

atttctactg gggagggagg a

21

<210> 975

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23238-1f(k)

<400> 975

gccactcctt ctcagtcttc atc

23

<210> 976

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23238-1r

<400> 976

gttccatcaa ctccaagca

20

<210> 977

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23327-1f(k)

<400> 977

gaagggtac tctatggtga gg

22

<210> 978

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23327-1r

<400> 978

aatggactgg tggaacttgg

20

<210> 979

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23360-1f(k)



&lt;400&gt; 979

gacgtgctca aggaagtgg

19

&lt;210&gt; 980

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23360-1r

&lt;400&gt; 980

tgatgaactc gacccagaga g

21

&lt;210&gt; 981

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23519-1f(k)

&lt;400&gt; 981

gaacaggatt tcccctagca

20

&lt;210&gt; 982

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23519-1r

&lt;400&gt; 982

ctctgaaaga cccccacatc

20

&lt;210&gt; 983

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

<220>

<223> Synthetic Primer: nbla23553-1f(k)

<400> 983

cagagggagg gtgttacgag

20

<210> 984

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23553-1r

<400> 984

ggcacgatat tgggatgg

18

<210> 985

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23554-1f(k)

<400> 985

gccaaagtgt atgggatgct

20

<210> 986

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23554-1r

<400> 986

ctggacctgt gtgaactgat g

21

<210> 987

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23683-lf(k)

<400> 987

tctgtgacca gggttttgtg

20

<210> 988

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23683-lr

<400> 988

cacacgagaa gtggatggtg

20

<210> 989

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23812-lf(k)

<400> 989

ctgcacacag ccacgattt

19

<210> 990

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23812-lr

<400> 990

tggcaggtta aatgtcttct cc

22

<210> 991

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23823-1f(k)

<400> 991

gccagagtcc cagctttcta c

21

<210> 992

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23823-1r

<400> 992

agttgtccct tcctcgcttc

20

<210> 993

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23849-1f(k)

<400> 993

agcaacacgc aaacgagag

19

<210> 994

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23849-1r

<400> 994

gcatctcctg ccttgattag a

21

<210> 995

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23882-1f(k)

<400> 995

tgctactggg agctgatgtg

20

<210> 996

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23882-1r

<400> 996

cggatggcaa acttctctgt

20

<210> 997

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23910r1-1f(k)

<400> 997

catggaaaca acgaaggaac a

21

<210> 998

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23910r1-1r

&lt;400&gt; 998

gacttggggt tggaacagg

19

&lt;210&gt; 999

&lt;211&gt; 18

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24064-1f(k)

&lt;400&gt; 999

cggaggagaa acggaggt

18

&lt;210&gt; 1000

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24064-1r

&lt;400&gt; 1000

gctattgacc cgtgggaag

19

&lt;210&gt; 1001

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24405-1f(k)

&lt;400&gt; 1001

agccagtaca cgcaggaaac

20

&lt;210&gt; 1002

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla24405-1r

<400> 1002

catcaaacca cctccacaag a

21

<210> 1003

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24897-1f(k)

<400> 1003

aggagtttgc tgctgctctc

20

<210> 1004

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24897-1r

<400> 1004

tcagtcctg cttccctatc

20

<210> 1005

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24913-1f(k)

<400> 1005

atcagtggt ggaagatgga

20

<210> 1006

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24913-1r

<400> 1006

cggattagct gttcgaggtg

20

<210> 1007

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20624d-1f(k)

<400> 1007

ttctggtgcg agttttgga

19

<210> 1008

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20624d-1r

<400> 1008

tctgaatggg caagaaggag

20

<210> 1009

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22029-1f(k)

<400> 1009

cagggacagg aaagatagga g

21

<210> 1010

<211> 20



<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22029-lr

<400> 1010

gctgaactct ggatgtctgg

20

<210> 1011

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22424rld-1f(k)

<400> 1011

tgcaccagct ctttcttctg t

21

<210> 1012

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22424rls-lr

<400> 1012

catgacctc tcctgcatct c

21

<210> 1013

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22594-1f(k)

<400> 1013

cacgatattc agaccttgac ttg

24

<210> 1014

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22594-lr

<400> 1014

agcatccttt gcctctgtgt

20

<210> 1015

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22622-1f(k)

<400> 1015

gcaaggggt cttcttcct

19

<210> 1016

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22622-lr

<400> 1016

ggctggcaag ttcattcct

19

<210> 1017

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20117d-1f(k)

<400> 1017

tggaccttgt ggttgagttg

20

<210> 1018

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20117-1r

<400> 1018

ctcttttggg ttgctgcttg

20

<210> 1019

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20238-1f(k)

<400> 1019

cgtggggatg tagcagga

18

<210> 1020

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20238-1r

<400> 1020

ctggaaagat ggggaaggag

20

<210> 1021

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20904-1f(k)

&lt;400&gt; 1021

acgtggattt atggtctgtg g

21

&lt;210&gt; 1022

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla20904-lr

&lt;400&gt; 1022

tgggaaaagg acatcaggaa

20

&lt;210&gt; 1023

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23293-1f(k)

&lt;400&gt; 1023

tgatgctggg caactacaga

20

&lt;210&gt; 1024

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla23293-lr

&lt;400&gt; 1024

tccaaaacta gccaggagga

20

&lt;210&gt; 1025

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla23297d-1f(k)

<400> 1025

acaagaaagc agtggagagg ag

22

<210> 1026

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23297d-1r

<400> 1026

gttttgctgt tggtcacttg g

21

<210> 1027

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23311-1f(k)

<400> 1027

tctccgttgg tctcactgtc t

21

<210> 1028

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23311-1r

<400> 1028

ggccacaatt tccatatacct c

21

<210> 1029

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23589-1f(k)

<400> 1029

gaagcatgag cccgtattta tc

22

<210> 1030

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23589-1r

<400> 1030

tccacaactt cataatccca ca

22

<210> 1031

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23629r1-1f(k)

<400> 1031

gtggtcgac ctccattct

19

<210> 1032

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23629r1-1r

<400> 1032

acatgcggtg gatttttgg

19

<210> 1033

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23862d-ldf(k)

<400> 1033

gctcctgtga tctggatgga

20

<210> 1034

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23862d-ldr

<400> 1034

ccaagtggga caaggtgaag

20

<210> 1035

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24133r1-1f(k)

<400> 1035

ccataagcca ccccaacttac

20

<210> 1036

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24133r1-1r

<400> 1036

gagccttggg tcatttgct

19

<210> 1037

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24761-1f(k)

<400> 1037

atggagccac gaacaacc

18

<210> 1038

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24761-1r

<400> 1038

ggtctgggaa gtgtagttga aga

23

<210> 1039

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20279-1f(k)

<400> 1039

cctatggaca cccaatcc

19

<210> 1040

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20279-1r

<400> 1040



ggcctgcttt agctccttc

19

<210> 1041

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20687-1f(k)

<400> 1041

ggcagacctc cagaccaac

19

<210> 1042

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20687-1r

<400> 1042

tgccacttcc actaccaga

20

<210> 1043

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20924d-1f(k)

<400> 1043

gcagcctcag ctcatacca

19

<210> 1044

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla20924d-1r

&lt;400&gt; 1044

tccaaatctt ccaccaaacc

20

&lt;210&gt; 1045

&lt;211&gt; 18

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21168-1f(k)

&lt;400&gt; 1045

caactccgtc agctcggt

18

&lt;210&gt; 1046

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21168-1r

&lt;400&gt; 1046

ccagagcctt ttcattcttg

20

&lt;210&gt; 1047

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla21303-1f(k)

&lt;400&gt; 1047

gttggtacc agaggaaatg

20

&lt;210&gt; 1048

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

<220>

<223> Synthetic Primer: nbla21303-1r

<400> 1048

tccacttaga aacggaagga

20

<210> 1049

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21483-1f(k)

<400> 1049

cacagcagaa aggaaaatgg a

21

<210> 1050

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21483-1r

<400> 1050

tgataagcag cactggatgg

20

<210> 1051

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21838-1f(k)

<400> 1051

ctagaatagg gaggtggaga atg

23

<210> 1052

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21838-1r

<400> 1052

ctgcgggttg gtaattgag

19

<210> 1053

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21917-1f(k)

<400> 1053

tgagttctgg attgcctgtg

20

<210> 1054

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla21917-1r

<400> 1054

caggcatgg attcttttct

20

<210> 1055

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22099-1f(k)

<400> 1055

ctggttccca cgcaagtaag

20

<210> 1056

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22099-1r

<400> 1056

ggttcatggc tctggaatgt

20

<210> 1057

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22438-1f(k)

<400> 1057

agcaggcatg gcaatttttag

20

<210> 1058

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla22438-1r

<400> 1058

ccagaggtgc agagaagtgt g

21

<210> 1059

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23111d-1f(k)

<400> 1059

attcaccctc ttgagagaac a

21

<210> 1060

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23111d-1r

<400> 1060

ctaaaaggcg acagcacaag

20

<210> 1061

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23208-1f(k)

<400> 1061

tggctctcctt cctgtgttcc

20

<210> 1062

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23208-1r

<400> 1062

gttgccctgca ttctccaca

19

<210> 1063

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24118-1f(k)

&lt;400&gt; 1063

acaagtccac accacagcac

20

&lt;210&gt; 1064

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24118-1r

&lt;400&gt; 1064

gagaaaccag aggccagaga

20

&lt;210&gt; 1065

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24279-1f(k)

&lt;400&gt; 1065

tggtcgggtc acaaatcttc

20

&lt;210&gt; 1066

&lt;211&gt; 19

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic Primer: nbla24279-1r

&lt;400&gt; 1066

aaccacactc ctgcctcca

19

&lt;210&gt; 1067

&lt;211&gt; 23

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Synthetic Primer: nbla24771d-1f(k)

<400> 1067

caagtttgcc tccttcatag aca

23

<210> 1068

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24771d-1r

<400> 1068

tgtacgctta ttgatctcat cctc

24

<210> 1069

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24871-1f(k)

<400> 1069

cagcaggga caaaactcca

20

<210> 1070

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24871-1r

<400> 1070

tggtacatg aaacgcatac c

21

<210> 1071

<211> 19

<212> DNA

<213> Artificial Sequence



<220>

<223> Synthetic Primer: nbla24443r1-1f(k)

<400> 1071

gctgccactg ctatgctct

19

<210> 1072

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla24443r1-1r

<400> 1072

catgctgttc tgcttgtgg

19

<210> 1073

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23300-1f

<400> 1073

gagagcagcg attaaccaaa ag

22

<210> 1074

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23300-1r

<400> 1074

acatcaac ttccctccaa

20

<210> 1075

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23664-1f

<400> 1075

ctttcatttc tcctgctgtc c

20

<210> 1076

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: nbla23664-1r

<400> 1076

gggactcacc cattttctat tt

22

<210> 1077

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: GAPD forward

<400> 1077

acctgacctg ccgtctagaa

20

<210> 1078

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: GAPD reverse

<400> 1078

tccaccaccc tggtgctgta

20

<210> 1079

<211> 27

<212> RNA

<213> Artificial Sequence

<220>

<223> Synthetic oligo-RNA

<400> 1079

agcaucgagu cggccuuggc cuacugg

27

<210> 1080

<211> 42

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic primer: oligo-dT adapter

<400> 1080

gcggctgaag acggcctatg tggccttttt tttttttttt tt

42

<210> 1081

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: forward

<400> 1081

agcatcgagt cggccttggt g

21

<210> 1082

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Primer: reverse

<400> 1082

gcgctgaaga cggcctatgt

20

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/13932

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> C12N15/09, C12Q1/68, G01N33/50

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> C12N15/09, C12Q1/68, G01N33/50

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

GenBank/EMBL/DDBJ/Geneseq, WPI (DIALOG), BIOSIS (DIALOG), JSTPlus (JOIS), MEDLINE (STN)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Eggert, A. et al., High-level expression of angiogenic factors is associated with advanced tumor stage in human neuroblastomas., Clin Cancer Res., Vol.6, No.5, pages 1900 to 1908, (2000)	1-13
A	Gallego, S. et al., Differential polymerase chain reaction with serial dilutions for quantification of MYCN gene amplification in neuroblastoma., Anticancer Res., Vol.18, No.2A, pages 1211 to 1215, (1998)	1-13

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 26 November, 2003 (26.11.03)	Date of mailing of the international search report 17 February, 2004 (17.02.04)
---	--

Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/13932

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Shuichi YAMANE, "Shinkei Gashugun Shuyo ni okeru Saibo Shogaisei T Saibo ni yori Ninshiki sareru Shuyo Taishuku Kogen no Idenshi Hatsugen", (Gene expression of tumor rejection antigens recognized by cytolytic T lymphocytes in neuroblastoma-related tumors), Journal of Kyoto Prefectural University of Medicine, Vol.108, No.3, pages 381 to 388, (1999), particularly, table 3	1-13
A	The Sanger Center, et al., Toward a Complete Human Genome Sequence., Genome Res., Vol.8, No.11, pages 1097 to 1108 (1998), particularly, GenBank database Accession No.AC093879	1-6,8,9

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/13932

## Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:  
(See extra sheet.)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
The parts relating to SEQ ID NOS:1, 175 and 176 in claims.

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/13932

Continuation of Box No. II of continuation of first sheet(1)

The nucleic acids represented by SEQ ID NOS:1 to 174 and the primers represented by SEQ ID NOS:175 to 1076 as set forth in claims are common to each other exclusively in being usable in diagnosing and judging neuroblastoma at stage 4s.

However, specific genes having an expression pattern specific to neuroblastoma at stage 4s are reported by the following documents 1 to 3. Accordingly, diagnosis/judgment of neuroblastoma at stage 4s by using a specific gene having an expression pattern specific to neuroblastoma at stage 4s cannot be considered as a special technical feature in the meaning within PCT Rule 13.2.

According to PCT Rule 13.3, unity of inventions shall be determined without regard to whether the inventions are claimed in separate claims or as alternatives within a single claim.

Therefore, the inventions relating to the nucleic acids represented by SEQ ID NOS:1 to 174 and the primers represented by SEQ ID NOS:175 to 1076 are not considered as a group of inventions so linked as to form a single general inventive concept. Concerning the relationships among the nucleic acids represented by SEQ ID NOS:1 to 174 and primer pairs corresponding thereto (i.e., SEQ ID NOS:175 to 518 and SEQ ID NOS:1073 to 1076), unity of inventions is fulfilled for each nucleic acid (i.e., 174 groups of inventions) but the inventions relating to other primers represented by SEQ ID NOS:519 to 1072 are 554 independent groups of inventions. That is, it is recognized that claims of the present case have 728 groups of inventions in total.

- Document 1: Eggert, A. et al., High-level expression of angiogenic factors is associated with advanced tumor stage in human neuroblastomaomas.  
Clin Cancer Res, Vol.6, No.5, pp. 1900-1908 (2000)
- Document 2: Gallego, S. et al., Differential polymerase chain reaction with serial dilutions for quantification of MYCN gene amplification in neuroblastomaoma.  
Anticancer Res, Vol.18, No.2A, pp. 1211-1215 (1998)
- Document 3: (Journal of Kotyo Prefectural University of Medicine),  
Vol.108, No.3, pp. 381-388 (1999)

## A. 発明の属する分野の分類 (国際特許分類 (IPC))

Int. Cl<sup>1</sup> C12N15/09, C12Q1/68, G01N33/50

## B. 調査を行った分野

調査を行った最小限資料 (国際特許分類 (IPC))

Int. Cl<sup>1</sup> C12N15/09, C12Q1/68, G01N33/50

最小限資料以外の資料で調査を行った分野に含まれるもの

国際調査で使用した電子データベース (データベースの名称、調査に使用した用語)

GenBank/EMBL/DBJ/Geneseq,  
WPI(DIALOG)、BIOSIS(DIALOG)、JSTPlus(JOIS)、MEDLINE(STN)

## C. 関連すると認められる文献

引用文献の カテゴリー*	引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示	関連する 請求の範囲の番号
A	Eggert, A. et al., High-level expression of angiogenic factors is associated with advanced tumor stage in human neuroblastomas. Clin Cancer Res, Vol. 6, No. 5, pp. 1900-1908 (2000)	1-13
A	Gallego, S. et al., Differential polymerase chain reaction with serial dilutions for quantification of MYCN gene amplification in neuroblastoma. Anticancer Res, Vol. 18, No. 2A, pp. 1211-1215 (1998)	1-13

☒ C欄の続きにも文献が列挙されている。☐ パテントファミリーに関する別紙を参照。

## \* 引用文献のカテゴリー

「A」 特に関連のある文献ではなく、一般的技術水準を示すもの

「E」 国際出願日前の出願または特許であるが、国際出願日以後に公表されたもの

「L」 優先権主張に疑義を提起する文献又は他の文献の発行日若しくは他の特別な理由を確立するために引用する文献 (理由を付す)

「O」 口頭による開示、使用、展示等に言及する文献

「P」 国際出願日前で、かつ優先権の主張の基礎となる出願

の日の後に公表された文献

「T」 国際出願日又は優先日後に公表された文献であって出願と矛盾するものではなく、発明の原理又は理論の理解のために引用するもの

「X」 特に関連のある文献であって、当該文献のみで発明の新規性又は進歩性がないと考えられるもの

「Y」 特に関連のある文献であって、当該文献と他の1以上の文献との、当業者にとって自明である組合せによって進歩性がないと考えられるもの

「&amp;」 同一パテントファミリー文献

国際調査を完了した日

26. 11. 2003

国際調査報告の発送日

17. 2. 2004

国際調査機関の名称及びあて先

日本国特許庁 (ISA/JP)

郵便番号 100-8915

東京都千代田区霞が関三丁目4番3号

特許庁審査官 (権限のある職員)

田村 明 照

4B

8412

電話番号 03-3581-1101 内線 3448



C (続き) . 関連すると認められる文献		
引用文献の カテゴリー*	引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示	関連する 請求の範囲の番号
A	山根秀一著、 神経芽腫群腫瘍における細胞障害性T細胞により認識される腫瘍退縮抗原の遺伝子発現 (Gene expression of tumor rejection antigens recognized by cytolytic T lymphocytes in neuroblastoma-related tumors) 京府医大誌, Vol. 108, No. 3, pp. 381-388 (1999)、特にTable 3	1-13
A	The Sanger Centre, et al., Toward a Complete Human Genome Sequence. Genome Res., Vol. 8, No. 11, pp. 1097-1108 (1998), 特にGenBank database Accession No. AC093879	1-6, 8, 9

## 第 I 欄 請求の範囲の一部の調査ができないときの意見 (第 1 ページの 2 の続き)

法第 8 条第 3 項 (PCT 17 条(2)(a)) の規定により、この国際調査報告は次の理由により請求の範囲の一部について作成しなかった。

1. ☐ 請求の範囲 \_\_\_\_\_ は、この国際調査機関が調査をすることを要しない対象に係るものである。つまり、
2. ☐ 請求の範囲 \_\_\_\_\_ は、有意義な国際調査をすることができる程度まで所定の要件を満たしていない国際出願の部分に係るものである。つまり、
3. ☐ 請求の範囲 \_\_\_\_\_ は、従属請求の範囲であって PCT 規則 6.4(a) の第 2 文及び第 3 文の規定に従って記載されていない。

## 第 II 欄 発明の単一性が欠如しているときの意見 (第 1 ページの 3 の続き)

次に述べるようにこの国際出願に二以上の発明があるとこの国際調査機関は認めた。

(特別ページ参照)

1. ☐ 出願人が必要な追加調査手数料をすべて期間内に納付したので、この国際調査報告は、すべての調査可能な請求の範囲について作成した。
2. ☐ 追加調査手数料を要求するまでもなく、すべての調査可能な請求の範囲について調査することができたので、追加調査手数料の納付を求めなかった。
3. ☐ 出願人が必要な追加調査手数料を一部のみしか期間内に納付しなかったので、この国際調査報告は、手数料の納付のあった次の請求の範囲のみについて作成した。
4. ☒ 出願人が必要な追加調査手数料を期間内に納付しなかったので、この国際調査報告は、請求の範囲の最初に記載されている発明に係る次の請求の範囲について作成した。

請求の範囲のうち配列番号 1, 175, 176 に関する部分

追加調査手数料の異議の申立てに関する注意

- ☐ 追加調査手数料の納付と共に出願人から異議申立てがあった。  
☐ 追加調査手数料の納付と共に出願人から異議申立てがなかった。

## (第Ⅱ欄)

請求の範囲に記載された配列番号1-174に記載された核酸及び配列番号175乃至1076に記載されたプライマーは、4s期神経芽細胞腫の診断・判定に用いることができることにおいてのみ共通する。

しかしながら、下記文献1-3には、4s期の神経芽細胞腫において特異的な発現パターンを有する特定の遺伝子が記載されている。したがって、4s期の神経芽細胞腫において特異的な発現パターンを有する特定の遺伝子を用いて、4s期神経芽細胞腫の診断・判定を行うことは、PCT規則13.2における特別な技術的特徴であるとはいえない。

ここで、PCT規則13.3によると、発明の単一性の判断はこれらの発明が別個の請求の範囲に記載されているか単一の請求の範囲に択一的な形式によって記載されているかを考慮することなく行われるべきものである。

よって、請求の範囲に記載された発明のうち配列番号1-174に記載された核酸及び配列番号175乃至1076に記載されたプライマーに関する発明は、単一の一般的発明概念を形成するように連関している一群の発明であるとはいえない。そして、配列番号1-174に記載された核酸とそれに対応する一対のプライマー、すなわち配列番号175乃至518、1073乃至1076との関係においてはそれぞれの核酸ごと(174個の発明群)に単一性を満たすものの、配列番号519乃至1072に記載されたその他のプライマーに関する発明は個々に独立した554個の発明群であり、請求の範囲には併せて728個の発明群が記載されているものと認める。

文献1 : Eggert, A. et al., High-level expression of angiogenic factors is associated with advanced tumor stage in human neuroblastomas. Clin Cancer Res, Vol. 6, No. 5, pp. 1900-1908 (2000)

文献2 : Gallego, S. et al., Differential polymerase chain reaction with serial dilutions for quantification of MYCN gene amplification in neuroblastoma. Anticancer Res, Vol. 18, No. 2A, pp. 1211-1215 (1998)

文献3 : 京府医大誌, Vol. 108, No. 3, pp. 381-388 (1999)